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Part A

By

Prof. Yuh-Shan Ho

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# Title: 4th AACD Congress

Özcan, A.S. and Özcan, A. (2004), Adsorption of Acid Blue 294 from aqueous solution onto white sepiolite. *4th AACD Congress*, 29 Sept-3 Oct. 2004, Kuşadası-AYDIN, TURKEY, Proceedings Book 288, Adnan Menderes University, 560-562.

Full Text: [2004\4th AACD Con, 560.pdf](2004/4th%20AACD%20Con,%20560.pdf)

Abstract: The adsorption of commercial acid dye, which is Acid Blue 294 (AB294), onto white sepiolite from aqueous solution, was studied in a batch system with respect to contact time and concentration. The pseudo-first-order and pseudo-second-order kinetic model were used to describe the kinetic data and the rate constants were evaluated. The results of the kinetic studies indicate that the adsorption process can be well described with the pseudo-second-order kinetic model. The Langmuir and Freundlich adsorption models were applied to describe the equilibrium isotherms and the isotherm constants were determined. The Langmuir model appears to fit the adsorption better than Freundlich model.

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Fu, Y.Z. and Viraraghavan, T. (2001), Removal of CI Acid Blue 29 from an aqueous solution by *Aspergillus Niger*. *AATCC Review*, **1** (1), 36-40.

Full Text: 2001\AATCC Rev1, 36.pdf

Abstract: Removal of C.I. Acid Blue 29 from an aqueous solution by biosorption on dead *Aspergillus Niger* fungus was investigated. Pretreatment with sulfuric acid was most effective with a biosorption capacity of 13.82 mg/g biomass compared with 6.63 mg/g of living biomass. Batch pH, kinetic, and isotherm studies were conducted to evaluate the biosorption capacity of the most effective pretreated biomass. The pH of the dye solution strongly affected the biosorption capacity. The effective pH was 4 and the corresponding biosorption capacity was 18.15 mg/g biomass. The kinetic studies showed that equilibrium was reached in 24 hours, and Lagergren first-order and Ho, et al. pseudo second-order rate equations were able to provide a realistic description of biosorption kinetics. Isotherm studies indicated that biosorption followed the Langmuir, Freundlich, and BET isotherms models.

Keywords: Aqueous Solution, Aspergillus Niger, Batch, BET, Biomass, Biosorption, Biosorption Kinetics, Capacity, Ci Acid Blue 29, Dye, Effluents, Equilibrium, First Order, Freundlich, Fungus, Isotherm, Isotherms, Kinetic, Kinetic Studies, Kinetics, Lagergren, Langmuir, Living, Models, pH, Pretreatment, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Removal, Second Order, Second-Order, Solution

? Sarkar, A.K. and Etters, J.N. (2001), Kinetics of the enzymatic hydrolysis of cellulose. *AATCC Review*, **1** (3), 48-52.

Full Text: 2001\AATCC Rev1, 48.pdf

Abstract: A preliminary kinetic study of the enzymatic hydrolysis of raw cotton fibers using a commercial cellulase mixture was performed. The reaction was executed at different flow rates of the reaction mixture through a reactor. Product formation time curves, soluble protein adsorption, rate of hydrolysis, and percent degree of hydrolysis during the course of hydrolysis were measured. The hydrolysis rate was found to have declined drastically during the initial hydrolysis period. Probable factors causing the reduction in the hydrolysis rate are elucidated.. The results of this study may be useful in optimizing enzymatic processing of cellulosic substrates.

Keywords: Adsorption, Binding, Biofinishing, Cellulase, Cellulose, Cotton, Course, Enzymes, Fibers, Flow, Hydrolysis, Insoluble Cellulose, Kinetic, Kinetic Study, Kinetics, Mar, Mass Transfer Effects, Protein, Rates, Reduction

? Shen, Y., Shen, J., Bishop, D. and Sun, K. (2002), Adsorption of a total crude cellulase on cotton, viscose, and flax yarns. *AATCC Review*, **2** (4), 43-47.

Full Text: 2002\AATCC Rev2, 43.pdf

Abstract: Adsorption isotherms for a total crude cellulase from Trichoderma pseudokoningii on cotton, flax, and viscose yarns were investigated to provide information about cellulase-cellulose binding on different types of cellulosic fibers. The half-saturation constants and maximum adsorption constants suggest that the total crude cellulase has greater affinity for viscose than for cotton and greater affinity for cotton than for flax. It is suggested that this is related to the different crystallinities and microporous structures of these fiber types. The fraction of adsorbable protein in the total cellulase was found to be the same for each of the three cellulase substrates.

Keywords: Adsorption, Adsorption Isotherms, Binding, Cotton, Enzymatic-Hydrolysis, Fiber Types, Fibers, Flax, Information, Isotherms, Model, Protein, Trichoderma Pseudokoningii, Trichoderma-Reesei, Viscose

? Porter, J.J. (2003), Understanding the sorption of direct dyes on cellulose substrates. *AATCC Review*, **3** (6), 20-24.

Full Text: 2003\AATCC Rev3, 20.pdf

Abstract: The Freundlich equation has been used to correlate most direct dye sorption on cellulose substrates. Results taken from several direct dyes are presented that show a much better correlation of the data is obtained with the Langmuir equation. This indicates that the dyes are sorbed on specific sites or surface area rather than in a diffuse fashion proposed by the Freundlich equation. Explanation of the sorption of mixtures of direct dyes is also presented as support of the application of the Langmuir equation to direct dye equilibria.

Keywords: Application, Cellulose, Cellulose Dyeing, Correlation, Data, Direct Dyes, Dye, Dyeing Equilibria, Dyes, Equilibria, Freundlich, Freundlich Equation, Langmuir, Langmuir Equation, Sorption, Support, Surface, Surface Area

? Ferus-Comelo, M., Nobbs, J.H. and Carbonell, J. (2003), Control of dye adsorption and color reproducibility on a jet dyeing machine. *AATCC Review*, **3** (9), 18-22.

Full Text: 2003\AATCC Rev3, 18.pdf

Abstract: The adsorption of C.I. Direct Yellow 162 on cotton fabric was analyzed on a pilot-scale jet dyeing machine. It was found that the exhaustion kinetic is independent of the fabric and dyebath flow rate over a wide range of values. Research results suggest that film diffusion is rate-determining at high temperatures and low electrolyte concentration. At high electrolyte concentration, the uptake rate is controlled by the momentary electrolyte concentration; i.e., the salt dosing curve. Dye levelness correlated well with the exhaustion speed per contact. The influence of dye amount, surfactants, and the shape of the exhaustion curve on the maximum permissible dye uptake rate is also evaluated. This information allows the selection of dyeing conditions for maximum color reproducibility and ensures dye levelness through controlled dye adsorption.

Keywords: Adsorption, Concentration, Cotton, Cotton Fabric, Diffusion, Direct Dyes, Dye, Dye Adsorption, Exhaustion, Fibers, Film Diffusion, Flow, Flow Rate, Information, Injection-Analysis, Jet Dyeing, Kinetic, Machine, Reproducibility, Research, Salt, Surfactants, Uptake

? Somboon, W., Bhavakul, V. and Sirianuntapiboon, S. (2004), Direct dye adsorption by granular activated carbon and water hyacinth powder. *AATCC Review*, **4** (4), 20-23.

Full Text: 2004\AATCC Rev4, 20.pdf

Abstract: The purpose of this research was to find a suitable decolorizing treatment for low volumes of wastewater generated by small-scale textile dyeing industries. The potential of water hyacinth powder (WH) to remove direct dyes from aqueous solution was evaluated. Its effectiveness was compared to commercially available, granular activated carbon (AC). Initial pH, NaCl concentration, and temperature were studied as factors that might affect adsorption capacity. The adsorption of dyes on AC and WH was determined using the Freundlich adsorption isotherms. WH powder was found to be a more effective and less expensive adsorbent than AC for the adsorption of the direct dyes studied.

Keywords: Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Isotherms, Aqueous Solution, Bioremediation, Capacity, Carbon, Concentration, Direct Dyes, Dye, Dye Adsorption, Dyes, Effectiveness, Freundlich, Granular Activated Carbon, Isotherms, NaCl, pH, Potential, Purpose, Removal, Research, Solution, Temperature, Treatment, Wastewater, Water, Water Hyacinth, Water-Hyacinth

? Arslan-Alaton, I. (2004), Granular activated-carbon assisted ozonation of biotreated dyehouse effluent. *AATCC Review*, **4** (5), 21-24.

Full Text: 2004\AATCC Rev4, 21.pdf

Abstract: Biologically pretreated dyehouse effluent was further treated using enhanced ozonation in the presence of granular activated carbon (GAC). The effect of GAC addition to the ozonation process on color, chemical oxygen demand (COD), and total organic carbon (TOC) abatement has been studied. Decolorization kinetics were not influenced by GAC addition, whereas COD and TOC removal rates and efficiencies were significantly improved in the presence of GAC at pH less than or equal to7. Control experiments conducted in the absence of ozone (O-3) showed that GAC served as an oxidation catalyst in the heterogeneous treatment system rather than as an adsorbent. Moreover, GAC could be used in at least six sequential batches without replacement or regeneration of the catalyst medium.

Keywords: Activated Carbon, Adsorbent, Adsorption, Carbon, Catalyst, Chemical, Chemical Oxygen Demand, Chemistry, COD, Color Removal, Demand, Environmental Issues, Experiments, GAC, Granular Activated Carbon, Industry, Kinetics, Organic, Organic Carbon, Oxidation, Oxidation, Oxygen, Ozone, pH, Radicals, Rates, Reactive Dyes, Regeneration, Removal, Reuse, TOC, Treatment, Waste-Water, Wastewater

? Grancaric, A.M., Tarbuk, A., Dumitrescu, I. and Biscan, J. (2006), Influence of fluorescent whitening agents on ultraviolet protection of pretreated cotton. *AATCC Review*, **6** (4), 44-48.

Full Text: 2006\AATCC Rev6, 44.pdf

Abstract: Despite some beneficial effects of ultraviolet (UV) radiation on skin, radiation can cause sunburn, allergies, skin aging, and even skin cancer. Protection from clothing is, in most cases, inadequate. To help prevent skin damage, fabrics can be treated with UV absorbers. While visible light interacts with dyes, UV radiation also interacts with UV absorbers and fluorescent whitening agents (FWA) in fabric. In this study, the influence of FWA on UV protection of pretreated cotton fabric was investigated. For better adsorption of FWA, cotton fabric was pretreated during mercerization with a cationic compound. This was followed by chemical and optical bleaching, and finally by treatment with a UV absorber. The influence of pretreatments on the mechanical properties of the cotton fabric was investigated as well.

Keywords: Adsorption, Aging, Allergies, Cancer, Cationization, Chemical, Clothing, Cotton, Cotton Fabric, Damage, Dyes, Fluorescent Whiteners, In-Vitro, Mechanical Properties, Pretreatments, Protection, Radiation, Reduction, Skin, Summer Fabrics, Treatment, UV, UV Protection, UV Radiation, UVR Transmission, Zeolite

? Smith, B. (2007), Dyebath monitoring and control: Past, present, and future. *AATCC Review*, **7** (11), 36-41.

Full Text: 2007\AATCC Rev7, 36.pdf

Abstract: Current dye process controls are essentially automated versions of centuries-old open-loop manual methods. Lot-to-lot shade variations, which are common in modern textile production, are the direct result of the inherent limitations of open-loop control systems when applied to the dynamic process of dyeing. This paper reviews a large body of work related to the development of closed-loop control methods that can ensure consistent results for dyeing processes. Methods of control, modeling, analysis, and dyebath monitoring are reviewed. Also, specific applications of dyebath monitoring and control systems to textile dyeing operations are described.

Keywords: Acid Dyes, Analysis, Control, Development, Dye, Dynamic, Equilibrium Sorption, Injection-Analysis, Methods, Mixtures, Modeling, Monitoring, Nov, Polyamides, Reviews, Systems, Work

? Hubbell, C.A., Beckham, H.W. and Cook, F.L. (2009), Reactive-ionic dyeing of films and fibers via ionic assembly and covalent fixation. *AATCC Review*, **9** (5), 43-47.

Full Text: 2009\AATCC Rev9, 43.pdf

Abstract: A reactive-ionic dye has been synthesized from commercially-available C.I. Disperse Red 1. Incorporation of the reactive-ionic group onto the chromophore allows for high levels of adsorption on the substrate due to electrostatic interactions and permanency via a second covalent fixation step. The reactive-ionic dye is effective on Substrates carrying a negative charge, such as polyamides and cellulosics. It was successfully applied to cellophane and nylon films, and nylon, silk, and bleached cotton fabrics.

Keywords: Adsorption, Ammonium Salt Groups, Charge, Disperse Red 1, Dye, End-Groups, Poly(Tetrahydrofuran), Tailored Synthesis, Telechelics

# Title: Abacus-A Journal of Accounting and Business Studies

Full Journal Title: [Abacus-A Journal of Accounting and Business Studies](http://www3.interscience.wiley.com/journal/118480526/home)

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Abstract: This study examines whether any regularity exists in the publication pattern among accounting researchers. The empirical results reveal that a strong bibliometric regularity exists in the accounting literature: the number of authors publishing in papers is approximately 1/n(c) of those publishing one paper. It is shown that the accounting literature conforms very well to the model with c=1.872 if data are taken from a large collection of journals. When applied to individual journals, the result shows that values of c range from 2.220 to 4.368. The graduates of seven graduate programs are found to account for more than one-third of the most prolific authors, indicating strong institutional dominance in the production of accounting literature.

Keywords: Bibliometric, Concentration, Journals, Literature, Model, Publication, Publishing, Research, Research Output, Researchers

# Title: Abstracts of Papers of the American Chemical Society

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Keywords: Bibliometric, Science

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Keywords: Cadmium, Chromium, Sawdust, Wastewater

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# Title: Academic Emergency Medicine

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? Osmond, M.H. and Klassen, T.P. (1995), Efficacy of Ipratropium bromide in acute childhood asthma - A metaanalysis. *Academic Emergency Medicine*, **2** (7), 651-656.

Full Text: 1995\Aca Eme Med2, 651.pdf

Abstract: Purpose: To determine whether inhaled ipratropium bromide provides an additive, clinically important improvement in children with acute asthma who are being treated with beta(2)-agonists. Methods: An English-language literature search was conducted employing MEDLINE (1966 to 1992), Science Citation Index (1986 to 1992) using key citations, bibliographic reviews of primary research and review articles, and correspondence with authors of recent articles. After independent review by two observers, six studies were selected on the basis of prespecified selection criteria. Two observers independently assessed the selected papers by using explicit methodologic criteria for evaluating the quality of studies dealing with therapeutic intervention. Results: None of the six studies found a significant difference in clinical rating score, admission rate; or length of stay in hospital between the ipratropium bromide and the control groups. The three studies with the highest methodologic validity measured the change in percentage predicted forced expiratory volume in 1 second (FEV(1)) from baseline to 60 minutes. The pooled effect size (95% CI) for these studies was 0.88 (0.42-1.34), which translates to an improvement in percentage predicted FEV(1) over the control group of 12.5% (95% CI, 6.6-18.4). In a subset of 23 children who had severe airway obstruction, peak expiratory flow rate (PEFR) responded better to a beta(2)-agonist alone (p = 0.007). Conclusion: The existing evidence reveals that the addition of ipratropium bromide to a beta(2)-agonist offers a statistically significant improvement in percentage predicted FEV(1) but no clinical improvement. As it may cause deterioration in PEFR in severely asthmatic children, ipratropium bromide should not be used universally for acute childhood asthma until further research determines the clinical significance of these spirometric changes.

Keywords: Additive, Airway, Asthma, Childhood, Children, Citations, Clinical, Clinical Significance, Control, Fenoterol, Flow, Flow Rate, Forced Expiratory Volume, Group, Groups, Hospital, Inhalation, Intervention, Ipratropium Bromide, Key, Length of Stay, Management, Medline, Metaanalysis, Pediatrics, Quality, Recent, Research, Review, Reviews, Salbutamol, Science Citation Index, Selection, Size, Validity

? Coben, J.H., Dearwater, S.R., Forjuoh, S.N. and Dixon, B.W. (1997), A population-based study of fatal and nonfatal firearm-related injuries. *Academic Emergency Medicine*, **4** (4), 248-255.

Full Text: [1997\Aca Eme Med4, 248.pdf](1997/Aca%20Eme%20Med4,%20248.pdf)

Abstract: Objective: To determine population-based firearm-related morbidity and mortality for Allegheny County, PA (population = 1.3 million), for the year 1994.

Methods: Fatalities were identified from a review of death certificates. To identify nonfatal cases, an active surveillance was conducted at all 24 acute care EDs in the county, The ED surveillance used 2 existing sources of case identification from each hospital to minimize undercount.

Results: Firearms were the leading cause of injury death to county residents, accounting for 155 deaths. The crude mortality rate from firearms was 11.7/100,000. Black males aged 15-19 years were most at risk for a firearm fatality (293/100,000). There were 514 nonfatal firearm injuries, producing a case fatality rate of 23%. The highest age-specific rate for nonfatal firearm-related injuries treated in the county EDs was observed for black males aged 15-19 years (2,245/100,000), which is 58 times higher than the firearm-related injury rate for the entire county population (38.7/100,000).

Conclusion: Firearm-related injury and death are a significant public health problem in Allegheny County, Although the crude mortality rate from firearms in the county is lower than the reported national rate, the observed rate for nonfatal injuries in the black youth of this community is the highest firearm injury incidence rate ever reported, Local surveillance of firearm-related injuries, including nonfatal events, is needed to more accurately demonstrate the magnitude of this problem.

Keywords: Firearms, Injury Surveillance, Epidemiologic Methods, Injury, Public Health, E-Codes, Socioeconomic-Status, Domestic Homicide, Emergency, Surveillance, Violence, Death, Hospitalization, Proposal, Costs, Need

? Federiuk, C.S. (1999), The effect of abbreviations on MEDLINE searching. *Academic Emergency Medicine*, **6** (4), 292-296.

Full Text: [1999\Aca Eme Med6, 292.pdf](1999/Aca%20Eme%20Med6,%20292.pdf)

Abstract: Objective: To determine the effect of the use of abbreviations and acronyms on citation retrieval in MEDLINE searches. Methods: Twenty common medical abbreviations that retrieved a minimum of 400 citations each in MEDLINE text, word searches were studied. Each abbreviation was entered in a MEDLINE subject search to determine whether it mapped to an appropriate medical subject heading (MeSH) term. The MeSH category and the number of citations retrieved were recorded. The abbreviation and its definition were each entered in separate text word searches, and the number of citations retrieved was recorded. Sets were combined to determine the number of identical and unique citations retrieved in the searches. Results: MEDLINE recognized all 20 abbreviations and mapped them to appropriate MeSH headings. MeSH term assignment, however, may be case- and space-sensitive, MeSH term searches retrieved more citations than text word searches for 18 of 20 abbreviations. Comparison of the document sets yielded by each search method revealed a subset of citations common to each. Although all sets retrieved showed overlap, no two were identical. In addition, each citation set contained a proportion of unique documents. Conclusion: Retrieval of all unique citations required three searches; subject with abbreviation, text word with abbreviation, and text word with definition. These results have important implications for MEDLINE. users.

Keywords: Abbreviations, End-User, Information Storage and Retrieval, Medline, Review Literature, Subject Headings

? Gaeta, T.J. (1999), Authorship: “law” and order. *Academic Emergency Medicine*, **6** (4), 297-301.

Full Text: [1999\Aca Eme Med6, 297.pdf](1999/Aca%20Eme%20Med6,%20297.pdf)

Abstract: Publication is a marker of academic success. In academia, appointments and promotions are in many cases strongly linked to the candidate's bibliography. The “publish or perish” mindset has placed extraordinary pressures on scientists and academic physicians alike. Authorship controversies have received considerable attention in the medical literature. Although guidelines are available to help determine how attribution should be acknowledged, anecdotal experiences with disputes associated with authorship continue to exist. This paper addresses several key problems facing authorship. A discussion of who should be given authorship, the responsibilities of an author, and a method for assigning authorship in a multiauthored publication is provided.

Keywords: Authorship, Publication, Ethics, Coauthorship

Borgialli, D.A., Hill, E.M., Maio, R.F., Compton, C.P. and Gregor, M.A. (2000), Effects of alcohol on the geographic variation of driver fatalities in motor vehicle crashes. *Academic Emergency Medicine*, **7** (1), 7-13.

Full Text: [2000\Aca Eme Med7, 7.pdf](2000/Aca%20Eme%20Med7,%207.pdf)

Abstract: Objective: To determine whether the increased risk of dying in a rural vs nonrural motor vehicle crash (MVC) can be attributed to driver demographics, crash characteristics, or police-reported alcohol use.

Methods: A retrospective cohort study was conducted, comparing all rural (116,242) and a 20% random sample of nonrural (104,197) Michigan drivers involved in an MVC during 1994-1996, Data consisted of all police-reported traffic crashes on public roadways. A logistic regression model was created, using survival as the dependent variable and gender, age, crash characteristics, and rural or nonrural county as independent variables. Driver alcohol use, as reported by the investigating officer, was introduced into the model, and the effect was analyzed.

Results: Nonsurvivors represented 0.2% of the total; 99.8% were survivors. Police-reported alcohol use was reported for 3.9% of drivers. Drivers in rural MVCs were more likely to be male, to be more than 50 years of age, to have been drinking alcohol, and to have more severe vehicle deformation as a result of the MVC. The relative risk (RR) for MVC nonsurvivors was 1.69 [95% confidence interval (CI) = 1.3 to 2.1] times higher for drivers in rural than nonrural counties. After adjusting for demographic and crash characteristics, the RR was 1.56 (95% CI = 1.2 to 1.9). Controlling for alcohol and its interactions decreased the RR to 1.26 (95% CI = 0.6 to 2.4), a nonsignificant difference between rural and nonrural MVC mortalities. Conclusions: Alcohol use by drivers in Michigan was a significant contributor for nonsurvivors of rural crashes. Efforts to decrease rural MVC mortality must address alcohol use.

Keywords: Alcohol, Crashes, Geographic Variation, Injury, Motor Vehicle, Rural Health, Injury, Mortality, Ethanol, Trauma, Accidents, Emergency, Severity, Death

Skokan, E.G., Olson, L.M., Cook, L.J. and Cornell, H.M. (2001), Snowmobile injuries in Utah. *Academic Emergency Medicine*, **8** (12), 1173-1177.

Full Text: [2001\Aca Eme Med8, 1173.pdf](2001/Aca%20Eme%20Med8,%201173.pdf)

Abstract: Objective: To describe the epidemiology of snowmobile injuries in Utah.

Methods: Analysis of probabilistically linked statewide emergency department (ED), hospital admission, and death certificate data for 1996 and 1997.

Results: There were 625 cases of snowmobile-related injuries. The majority (83%) were evaluated in the ED only. Median ED patient age was 29 years (range 3-74 years), and 66% were male. The leading diagnoses were open wounds to the head (7.8%), back strains (5.4%), and contusions of the trunk and lower extremities 5.2% and 5.0%, respectively). An Injury Severity Score (ISS) of greater than or equal to4 (range 1-75) was found in 37% of the ED patients. The median charge was $373 per patient, with two-year cumulative charges of $266,283. One hundred seven patients required inpatient hospital care, Median inpatient age was 32 years (range 4-92 years), and 60% were male. Leading inpatient diagnoses were fracture of the vertebral column (9.3%), lower extremity fracture (9.3%), upper extremity fracture (6.5%), and pelvis fracture (3.7%). An ISS of greater than or equal to4 (range 1-38) was found in 70% of the hospitalized patients. Average length of stay was 3 days, with a range of 1 to 68 days. Median inpatient charge was $6,003 per patient, with two-year cumulative charges of $1,333,218. Ten inpatients required transfer for rehabilitation or skilled nursing care. There were a total of six fatalities, three of which occurred in the ED, one in the inpatient population, and two identified from the death certificate database. Conclusions: By combining ED, inpatient, and death certificate data sets, probabilistic linkage provides a comprehensive description of snowmobile-related injuries and a baseline evaluation of morbidity, mortality, and financial burden.

Keywords: Snowmobile, Sports and Recreational Injuries, Probabilistic Linkage, Injury Control, Trauma

? Wing, A., Villa-Roel, C., Yeh, B., Eskin, B., Buckingham, J. and Rowe, B.H. (2010), Effectiveness of corticosteroid treatment in acute Pharyngitis: A systematic review of the literature. *Academic Emergency Medicine*, **17** (5), 476-483.

Full Text: [2010\Aca Eme Med17, 476.pdf](2010/Aca%20Eme%20Med17,%20476.pdf)

Abstract: Objectives: The objective was to examine the effectiveness of corticosteroid treatment for the relief of pain associated with acute pharyngitis potentially caused by group A beta-hemolytic Streptococcus (GABHS). Methods: This was a systematic review of the literature. Data sources used were electronic databases (Cochrane Library, MEDLINE, EMBASE, Biosis Previews, Scopus, and Web of Science), controlled trial registration websites, conference proceedings, study references, experts in the field, and correspondence with authors. Selection criteria consisted of randomized controlled trials (RCTs) in which corticosteroids, alone or in combination with antibiotics, were compared to placebo or any other standard therapy for treatment of acute pharyngitis in adult patients, pediatric patients, or both. Two reviewers independently assessed for relevance, inclusion, and study quality. Weighted mean differences (WMDs) were calculated and are reported with corresponding 95% confidence intervals (CIs). Results: From 272 potentially relevant citations, 10 studies met the inclusion criteria. When compared to placebo, corticosteroids reduced the time to clinically meaningful pain relief (WMD = -4.54 hours; 95% CI = -7.19 to -1.89); however, they provided only a small reduction in pain scores at 24 hours (WMD = -0.90 on a 0-10 visual analog scale; 95% CI = -1.5 to -0.3). Heterogeneity among pooled studies was identified for both outcomes (I(2) = 81 and 74%, respectively); however, the GABHS-positive subgroup receiving corticosteroid treatment did have a significant mean reduction in time to clinically meaningful pain relief of 5.22 hours (95% CI = -7.02 to -3.42; I(2) = 0%). Short-term side effect profiles between corticosteroids and placebo groups were similar. Conclusions: Corticosteroid administration for acute pharyngitis was associated with a relatively small effect in time to clinically meaningful pain relief (4.5-hour reduction) and in pain relief at 24 hours (0.9-point reduction), with significant heterogeneity in the pooled results. Decision-making should be individualized to determine the risks and benefits; however, corticosteroids should not be used as routine treatment for acute pharyngitis. ACADEMIC EMERGENCY MEDICINE 2010; 17:476-483 (C) 2010 by the Society for Academic Emergency Medicine.

Keywords: Acute Exudative Pharyngitis, Adjuvant Therapy, Adult, Antibiotics, Authors, Children, Citations, Cochrane, Confidence Intervals, Controlled-Trial, Correspondence, Corticosteroid, Databases, Decision Making, Decision-Making, Effectiveness, Efficacy, Embase, Emergency, Emergency-Medicine, Literature, Medicine, Medline, Metaanalysis, Methods, Oral Dexamethasone, Outcomes, Pain, Pediatric, Pharyngitis, Randomized Controlled Trials, Registration, Review, Science, Scopus, Sore Throat, Streptococcal Pharyngitis, Systematic, Systematic Review, Therapy, Treatment, Web of Science, Websites

? Kuhn, G.J., Shayne, P., Coates, W.C., Fisher, J., Lin, M., Maggio, L.A. and Farrell, S.E. (2010), Critical appraisal of emergency medicine educational research: The best publications of 2009. *Academic Emergency Medicine*, **17** (10), S16-S25.

Full Text: [2010\Aca Eme Med17, S16.pdf](2010/Aca%20Eme%20Med17,%20S16.pdf)

Abstract: Objectives: The objective was to critically appraise and highlight methodologically superior medical education research specific to emergency medicine (EM) published in 2009. Methods: A search of the English language literature in 2009 querying Ovid MEDLINE In-Process & Other Non-Indexed Citations, Ovid MEDLINE 1950 to Present, Web of Science, Education Resources Information Center (ERIC), and PsychInfo identified 36 EM studies that used hypothesis-testing or observational investigations of educational interventions. Six reviewers independently ranked all publications based on 10 criteria, including four related to methodology, that were chosen a priori to standardize evaluation by reviewers. This was a refinement of the methods used to appraise medical education published in 2008. Results: Seven studies met the standards as determined by the averaged rankings and are highlighted and summarized here. This year, 16 of 36 (44%) identified studies had funding, compared to 11 of 30 (36%) identified last year; five of seven (71%) highlighted publications were funded in 2009 compared to three of five (60%) highlighted in 2008. Use of technology in medical education was reported in 14 identified and four highlighted publications, with simulation being the most common technology studied. Five of the seven (71%) featured publications used a quasi-experimental or experimental design, one was observational, and one was qualitative. Practice management topics, including patient safety, efficiency, and revenue generation, were examined in seven reviewed studies. Conclusions: Thirty-six medical education publications published in 2009 focusing on EM were identified. This critical appraisal reviews and highlights seven studies that met a priori quality indicators. Current trends are noted. ACADEMIC EMERGENCY MEDICINE 2010; 17:S16-S25 (C) 2010 by the Society for Academic Emergency Medicine.

Keywords: Citations, Continuing Medical Education, Critical, Critical Appraisal, Education, Education Research, Emergency, Emergency Medicine, Emergency-Medicine, Environment, Evaluation, Experience, Funding, Graduate Medical Education, High-Fidelity Simulation, Interventions, Literature, Management, Medical, Medicine, Medline, Methodology, Methods, Perceptions, Performance, Practice, Publications, Qualitative Research, Quality Indicators, Real-Time, Reliability, Research, Residents, Safety, Science, Standards, Topics, Training-Program, Trends, Undergraduate Medical Education, Web of Science

? Rowe, B.H., Guo, X.Y., Villa-Roel, C., Schull, M., Holroyd, B., Bullard, M., Vandermeer, B., Ospina, M. and Innes, G. (2011), The role of triage liaison physicians on mitigating overcrowding in emergency departments: A systematic review. *Academic Emergency Medicine*, **18** (2), 111-120.

Full Text: [2011\Aca Eme Med18, 111.pdf](2011/Aca%20Eme%20Med18,%20111.pdf)

Abstract: Objectives: The objective was to examine the effectiveness of triage liaison physicians (TLPs) on mitigating the effects of emergency department (ED) overcrowding. Methods: Electronic databases (Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, Web of Science, HealthSTAR, Dissertation Abstracts, and ABI/INFORM Global), controlled trial registry websites, conference proceedings, study references, contact with experts in the field, and correspondence with authors were used to identify potentially relevant TLP studies. Intervention studies in which a TLP was used to influence ED overcrowding metrics (length of stay [LOS] in minutes, physician initial assessment [PIA], and left without being seen [LWBS]) were included in the review. Two reviewers independently conducted data extraction and assessed the citation relevance, inclusion, and study quality. For continuous outcomes, weighted mean differences (WMD) were calculated and reported with corresponding 95% confidence intervals (CIs). For dichotomous variables, individual and pooled statistics were calculated as relative risk (RR) with 95% CI. Results: From 14,446 potentially relevant studies, 28 were included in the systematic review. Thirteen were journal publications, 12 were abstracts, and three were Web-based articles. Most studies employed before-after designs; 23 of the 28 studies were considered of weak quality. Based on the statistical pooling of data from two randomized controlled trials (RCTs), TLP resulted in shorter ED LOS compared to nurse-led triage (WMD =) -36.85 min; 95% CI =) -51.11 to -22.58). One of these RCTs showed a significant reduction in the PIA associated to TLP presence (WMD =) -30.00 min; 95% CI =) -56.91 to -3.09); the other RCT showed no change in LWBS due to a CI that included unity (RR = 0.82; 95% CI = 0.67 to 1.00). Conclusions: While the evidence summarized here suggests that to have a TLP is an effective intervention to mitigate the effects of ED overcrowding, due to the weak research methods identified, more research is required before its widespread implementation. ACADEMIC EMERGENCY MEDICINE 2011; 18:111-120 (C) 2011 by the Society for Academic Emergency Medicine.

Keywords: Assessment, Authors, Citation, Clinical-Trials, Cochrane, Confidence Intervals, Correspondence, Databases, Doctor, Effectiveness, EMBASE, Emergency, Emergency Department, Emergency-Medicine, Impact, Intervention, Intervention Studies, Journal, Journal Publications, Length of Stay, Medicine, Medline, Methods, Metrics, Outcomes, Physicians, Publications, Randomized Controlled Trials, Relative Risk, Research, Review, Risk, Science, Statistical, Statistics, Systematic, Systematic Review, Web of Science, Websites

? Rowe, B.H., Villa-Roel, C., Guo, X.Y., Bullard, M.J., Ospina, M., Vandermeer, B., Innes, G., Schull, M.J. and Holroyd, B.R. (2011), The role of triage nurse ordering on mitigating overcrowding in emergency departments: A systematic review. *Academic Emergency Medicine*, **18** (12), 1349-1357.

Full Text: [2011\Aca Eme Med18, 1349.pdf](2011/Aca%20Eme%20Med18,%201349.pdf)

Abstract: Objectives: The objective was to examine the effectiveness of triage nurse ordering (TNO) on mitigating the effect of emergency department (ED) overcrowding. Methods: Electronic databases (Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, CINAHL, SCOPUS, Web of Science, HealthSTAR, Dissertation Abstracts, ABI/INFORM Global), controlled trial registry websites, conference proceedings, study references, experts in the field, and correspondence with authors were used to identify potentially relevant studies. Interventional studies in which TNO was used to influence ED overcrowding metrics (length of stay [LOS] and physician initial assessment [PIA]) were included in the review. Two reviewers independently assessed study eligibility and methodologic quality. Mean differences were calculated and reported with corresponding 95% confidence intervals (CIs). Results: From more than 14,000 potentially relevant studies, 14 were included in the systematic review. Most were single-center ED studies; the overall quality was rated as weak, due to methodologic deficiencies and variable outcome reporting. TNO was associated with a 37-minute mean reduction (95% CI = -44.10 to -30.30 minutes) in the overall ED LOS in one randomized clinical trial (RCT); a 51-minute mean reduction (95% CI = -56.3 to -45.5 minutes) was observed in non-RCTs. When applied to injured subjects with suspected fractures, TNO interventions reduced ED LOS by 20 minutes (95% CI = -37.5 to -1.9 minutes) in three RCTs and by 18 minutes (95% CI = -23.2 to -13.2) in two non-RCTs. No significant reduction in PIA was observed in two RCTs. Conclusions: Overall, TNO appears to be an effective intervention to reduce ED LOS, especially in injury and/or suspected fracture cases. The available evidence is limited by small numbers of studies, weak methodologic quality, and incomplete reporting. Future studies should focus on a better description of the contextual factors surrounding these interventions and exploring the impact of TNO on other indicators of productivity and satisfaction with health care delivery.

Keywords: Assessment, Authors, Care, Clinical Trial, Clinical-Trials, Cochrane, Confidence Intervals, Correspondence, Databases, Differences, Effectiveness, Embase, Emergency, Emergency Department, Fracture, Health Care, Health Care Delivery, Impact, Indicators, Injury, Intervention, Interventions, Length of Stay, Medicine, Medline, Methods, Metrics, Outcome, Physician, Productivity, Quality, Randomized Clinical Trial, Randomized Controlled-Trial, Reduction, Review, Science, Scopus, Systematic, Systematic Review, Web of Science, Web-of-Science, Websites, X-Rays

# Title: Academic Medicine

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? Bilge, A., Shugerman, R.P. and Robertson, W.O. (1998), Misrepresentation of authorship by applicants to pediatrics training programs. *Academic Medicine*, **73** (5), 532-533.

Full Text: [1998\Aca Med73, 532.pdf](1998/Aca%20Med73,%20532.pdf)

Abstract: Purpose. To determine whether applicants to pediatrics residency and fellowship programs misrepresented authorship of publications.

Method. The authors sampled 1995 applications to the University of Washington School of Medicine’s pediatrics residency program and pediatrics pulmonary fellowship program. They submitted all publications claimed in the submitted applications to extensive efforts to authenticate both their existence and authorship.

Results. Among the 404 pediatrics residency program applications studied, 147 claimed authorship of publications; 29 (19.7%) of these contained at least one unverifiable publication. of the 401 publications claimed in the 147 applications, 41 (10.2%) could not be confirmed. Among 31 fellowship applications, 14 claimed publications. At least one citation was unverifiable for each of the 14 applications. of the total 77 publications claimed, 31 (40%) could not be confirmed.

Conclusion. Misrepresentation occurs on graduate medical education applications; solutions are needed to address this problem.

Keywords: Credentials

? Goe, L.C., Herrera, A.M. and Mower, W.R. (1998), Misrepresentation of research citations among medical school faculty applicants. *Academic Medicine*, **73** (11), 1183-1186.

Full Text: [1998\Aca Med73, 1183.pdf](1998/Aca%20Med73,%201183.pdf)

Abstract: Purpose. A descriptive study of bibliographic misrepresentations by applicants to medical school faculty positions. Method. The authors reviewed 250 1995 faculty applicant bibliographies from eight medical institutions, representing six medical specialities. Using computerized library database searches or direct retrieval, they evaluated the legitimacy of each journal, abstract, and book citation. The authors classified and tabulated the following discrepancies as misrepresentations: (1) citing a nonexistent article in an existent source, (2) claiming authorship on an article that did not list the applicant as an author, and (3) altering authorship order to enhance the applicant’s position. Results. The authors found 56 misrepresented citations among 2,149 verified articles (2.6%). These misrepresentations were distributed among 39 applicants (15.6%; 95% CI, 11.5% to 20.9%); 11 of whom (4.4%) had multiple discrepancies. Sixty-eight percent of all misrepresentations were due to discrepancies in authorship order, while journal citations constituted the most frequent source of misrepresentation (77%). Conclusions. Misrepresentation of bibliographic citations does exist among medical school faculty applicants. One possible solution to this problem would be to require applicants to document their bibliographic citations.

Keywords: Author, Authors, Authorship, Bibliographic, Citation, Citations, Faculty, Journal, Medical, Medical School, Research

Adler, M.D. and Johnson, K.B. (2000), Quantifying the literature of computer-aided instruction in medical education. *Academic Medicine*, **75** (10), 1025-1028.

Full Text: [2000\Aca Med75, 1025.pdf](2000/Aca%20Med75,%201025.pdf)

Abstract: Purpose. To characterize the literature about computer-aided instruction (CAI) as it relates to medical education.

Method. A descriptive study using the Medline and ERIC databases, reviewing articles pertaining to CAI for medical professionals. The literature was evaluated with respect to type of article, journal, language, and year of publication.

Results. The search yielded 2,840 citations, 92% of which were in English. The number of journals with at least one citation was 747. Less than 5% of the 5,147 authors had three or more articles published in the CAI literature. of the citations with abstracts, 60% were demonstrations of a CAI application, 11% were media-comparative studies, and 13% were analyses of the CAI field. While the pace of article publication increased markedly over time, the percentages of article types did not change significantly over time. Less than 10% of CAI articles appeared in core medical journals.

Conclusion. Medical CAI is an increasingly popular topic of research and publication. However, these studies appear in journals with smaller circulations, are predominantly demonstration articles, and are generally written by authors with two or fewer publications. Evaluation articles remain less common. A series of analytic articles has appeared offering substantive suggestions for better research design. These suggestions appear to have gone unheeded. CAI investigators need be more aware of the gaps in the existing body of CAI publications, and the inherent difficulties of this type of research, if this literature is to move beyond this early stage of development.

Bordage, G. and McGaghie, W.C. (2001), Title, authors, and abstract. *Academic Medicine*, **76** (9), 945-947.

Full Text: [2001\Aca Med76, 945.pdf](2001/Aca%20Med76,%20945.pdf)

Keywords: Informative Abstracts, Structured Abstracts, Research Articles, Proposal, Accuracy

Kostoff, R. (2001), The extraction of useful information from the biomedical literature. *Academic Medicine*, **76** (12), 1265-1270.

Full Text: [2001\Aca Med76, 1265.pdf](2001/Aca%20Med76,%201265.pdf)

Abstract: Modern information technology provides the biomedical professionalwith powerful tools and processes for extracting useful informationfrom large volumes of text. Presently, little use is made of the full capabilities of these tools to supplement researchand teaching. This article gives an overview of these toolsand processes, and shows the diversity of ways they can be appliedto enhance the capabilities of biomedical professionals. The articledefines information technology terms, presents the requirementsfor extracting high-quality information, describes some availabletechniques for extracting information, and summarizes myriadinformation-extraction applications. While the biomedical researcheror teacher can gain substantial benefits by using effectiveinformation-extraction techniques, substantial time and effortand technical expertise are required to generate a credible high-qualityproduct, that is, the information needed.

? Beasley, B.W., Scrase, D.R. and Schulz, H.J. (2002), Determining the predictors of internal medicine residency accreditation: What they do (not what they say). *Academic Medicine*, **77** (3), 238-246.

Full Text: [2002\Aca Med77, 238.pdf](2002/Aca%20Med77,%20238.pdf)

Abstract: Purpose. The Accreditation Council for Graduate Medical Education and the Residency Review Committee for Internal Medicine (RRC-IM) evaluate internal medicine residence programs using a list of 301 program requirements. The authors investigated which requirements, program demographics, and site-visitor characteristics were the strongest predictors of accreditation. Method. The authors surveyed the program directors of all 405 accredited internal medicine residency programs in February 1998, obtaining data on the duration of the accreditation process, site visitors, and number and quality of citations. They also requested a copy of the notification letter containing citations and length of time until the next accreditation site visit (cycle length). Results. A total of 217 responses (54%) was received. The mean cycle length was 3.0 years, and the accreditation process averaged 14.5 months. Smaller programs had a shorter average cycle length. Site visitors were reported to be prepared and professional overall. However, site visitors with the lowest evaluations by program directors were associated with shorter cycle lengths. Four program characteristics and program citations accounted for 60% of the variation in cycle length: total number of citations in the notification letter, percentage of graduates passing the American Board of Internal Medicine Certifying Examination, inadequate demonstration of resident scholar, hip, and inadequate ambulatory care experience. Conclusion. The authors devised an independent mechanism for determining the duration of the RRC-IM review process, influence of program demographics on the process, influence of site visitors on the accreditation action, and program requirements having the greatest effect on cycle length.

Keywords: Directors, Requirements

Hebert, R.S., Levine, R.B., Smith, C.G. and Wright, S.M. (2003), A systematic review of resident research curricula. *Academic Medicine*, **78** (1), 61-68.

Full Text: [2003\Aca Med78, 61.pdf](2003/Aca%20Med78,%2061.pdf)

Abstract: Purpose. To review in a systematic manner the published curricula for training house officers in research.

Method. Articles were identified by searching the Medline, Educational Resources Information Center, and Science Citation Index databases, educational Web sites, and bibliographies of captured articles, and by contacting experts who had developed resident research curricula. Demographic information, curriculum development steps, educational strategies, evaluation methods, and outcomes were abstracted.

Results. The search identified 41 articles describing curricula. The most common curricular objectives were to increase house officers’ research productivity and improve their critical appraisal skills. Only one curriculum was designed with the goal of producing academic physicians. Among many instructional methods, conducting research projects, exposing learners to role models or mentors, and providing house officers with multiple opportunities to present their work were common. Only 27 articles (66%) articulated goals or objectives, and 11 included (27%) needs assessments. Evaluation methods were often rudimentary, frequently limited to learners’ self-assessments or authors’ anecdotal reports. Five (12%) reported pre-postintervention testing of learners’ knowledge. No curricula were evaluated as prospective pretest - posttest controlled trials. A minority of articles reported costs, obstacles encountered, or modifications made in the curriculum.

Conclusion. Successful educational interventions should incorporate needs assessments, clearly defined learning objectives, and evaluation methods. While many curricula for resident research exist, the lack of detailed developmental information and meaningful evaluations hinders educators interested in adopting these curricula.

Keywords: Graduate Medical-Education, Clinical Research, Scientific Method, Program, Challenge, Radiologists, Psychiatry, Obstetrics, Gynecology

? Boex, J.R. and Leahy, P.J. (2003), Understanding residents’ work: Moving beyond counting hours to assessing educational value. *Academic Medicine*, **78** (9), 939-944.

Full Text: [2003\Aca Med78, 939.pdf](2003/Aca%20Med78,%20939.pdf)

Abstract: Purpose. To begin to understand how residents’ work affects their own educations and the hospitals in which most of their training takes place, the authors undertook a systematic review of the literature analyzing residents’ activities. This review sought to analyze resident physicians’ activities to assess the educational value of residents’ work. Method. The published literature was searched in 2001 using the Medline and Science Citation Index databases, and the unpublished literature was searched using bibliographies and key informants. One hundred six studies were rated for methodological rigor using the Cochrane Collaboration protocol, as modified by Bland et al. for nonclinical trials. Only those studies undertaken following the Bell Commission’s report in 1987 and whose methodological rigor score fell at or above the median for all studies rated were included in the data synthesis. Results data from 16 studies that included over 1,000 residents in six different specialties, were combined under the definitions of types of residents’ activities: marginal, patient care, teaching and learning, and other. Results. This preliminary analysis found that residents devoted approximately 36% of their effort to direct patient care necessary to achieve specialty-specific learning objectives, 15% to the residency program’s organized teaching activities, and potentially as much as 35% to delivering patient care of marginal or no educational value. An additional 16% of residents’ waking time on duty was spent in other, unspecified activities. Conclusion. It is possible and potentially valuable to consider not only the number of hours worked by residents, but the educational content of their work when considering residency work and hour reforms.

Keywords: Bibliographies, Call, Care, Citation, Collaboration, Counting, Databases, Internal-Medicine, Learning, Literature, Medicine House Staff, Medline, Nights, Residents, Review, Science, Science Citation Index, Service, Spend, Surgical Residents, Systematic Review, Time Use, Training

? McCarty, T., Parkes, M.V., Anderson, T.T., Mines, J., Skipper, B.J. and Grebosky, J. (2005), Improved patient notes from medical students during Web-based teaching using faculty-calibrated peer review and self-assessment. *Academic Medicine*, **80** (10), S67-S70.

Full Text: [2005\Aca Med80, S67.pdf](2005/Aca%20Med80,%20S67.pdf)

Abstract: Background This study examines the effectiveness of Calibrated Peer Review (TM) (CPR), a Web-based writing development program, to teach and assess medical students’ patient note-writing skills in a standardized fashion. Method At the end of the clerkship year, 67 medical students were divided into three groups, introduced to CPR, and instructed in patient note-writing. Students then wrote notes for three clinical cases, presented in different order to each group. After training on faculty-calibrated standards, students evaluated their peers’ notes and their own notes. Trained faculty, blinded to author, order, and group, also graded student notes. Results Faculty gave lower scores than students, but both groups found students’ scores improved significantly from the first to the third note written. Conclusions Student-written patient notes improved in quality while using CPR. The program uses approaches valued in medicine (accurate peer review and self -reflection) to enhance performance.

Keywords: Author, Development, Education, Effectiveness, Faculty, Medical, Medicine, Peer Review, Peer-Review, Quality, Review, Standards, Students, Teaching, Training, Writing

? Kennedy, T.J.T., Regehr, G., Baker, G.R. and Lingard, L.A. (2005), Progressive independence in clinical training: A tradition worth defending? *Academic Medicine*, **80** (10), S106-S111.

Full Text: [2005\Aca Med80, S106.pdf](2005/Aca%20Med80,%20S106.pdf)

Abstract: Background Progressive independence is a traditional premise of clinical training. Recently, issues such as managed care, work hours limitation, and patient safety have begun to impact the degree of autonomy afforded to clinical trainees. This article reviews empirical evidence and theory pertaining to the role of progressive autonomy in clinical learning. Method A computerized literature search was performed using MEDLINE, PsycINFO, Social Sciences Citation Index, and Educational Resources information Center. This article presents a synthetic review of relevant empirical and theoretical concepts from the domains of medicine, psychology, education, kinesiology, and sociology. Results The clinical psychology and medical education literatures provide evidence that clinical trainees act more independently as their training progresses, but have not yet evaluated the educational efficacy of providing progressive independence, or the consequences of failing to do so. The expertise and motor learning literatures provide some theoretical evidence (as yet untested in complex clinical environments) that the provision of too much guidance or feedback to trainees could be educationally detrimental in the long term. The sociology literature provides insight into the cultural values underlying the behavior of clinical teachers and trainees relating to issues of supervision and independence. Conclusions There is limited empirical support for the current model of progressive independence in clinical learning; however, diverse theoretical perspectives raise concern about the potential educational consequences of eroding progressive independence. These perspectives could inform future research programs that would create a creative and effective response to the social and economic forces impacting clinical education.

Keywords: Autonomy, Behavior, Care, Clinical, Clinical Psychology, Cultural, Economic, Education, Efficacy, Evidence, Guidance, Impact, Information, Learning, Limitation, Literature, Long Term, Long-Term, Managed Care, Medical, Medical Education, Medicine, Model, Patient Safety, Potential, Psychology, PsycINFO, Research, Review, Reviews, Role, Safety, Social, Sociology, Support, Term, Theory, Training, Work, Work Hours

? Dunn, L.B., Hammond, K.A.G. and Roberts, L.W. (2009), Delaying care, avoiding stigma: Residents’ attitudes toward obtaining personal health care. *Academic Medicine*, **84** (2), 242-250.

Full Text: [2009\Aca Med84, 242.pdf](2009/Aca%20Med84,%20242.pdf)

Abstract: Purpose The authors sought to understand the health issues and care-seeking practices reported by residents and explored the extent to which fear of academic jeopardy, stigma, and being the subject of discussion by colleagues may affect residents’ care-seeking. Method Residents at the University of New Mexico Health Sciences Center were surveyed in 2000-2001 regarding avoidance or postponement of obtaining necessary health care, responses of others to absences, and perceptions of jeopardy to training status if a supervisor learned of a specific condition. Responses were analyzed via repeated-measures MANOVA. Results of 217 surveys, 155 were returned (71% response rate). Concerns with mental health, pain, minor infections, or relationship, sleep-related, fatigue, or gynecological/urological problems were expressed by 26% to 43% of residents. Concerns of potential jeopardy if a director or supervisor learned about personal health issues were strongest for problems with drugs/alcohol, moderately high for HIV, and moderate for mental health, eating-related problems, cancer, and STDs. Residents had sometimes avoided seeking care, and 18% had often avoided or delayed care-seeking; women delayed or avoided care more often than men. More frequent avoidance of seeking care was associated with poorer self-rated mental and physical health and greater health concerns. Conclusions Residents at times postpone or avoid seeking care. Time and scheduling difficulties influence the ability to obtain care. Perceptions of potential academic jeopardy, stigma, and reactions of colleagues may affect residents’ attitudes and care-seeking. Further inquiry is essential to understand how extensively these factors may influence the well-being of residents.

Keywords: 1,027 Students, Cancer, Concerns, Doctors, Graduate-Medical-Education, HIV, Illness, Patient, Physician, Professionalism, Programs, Schools, Services

? Cook, D.A., Levinson, A.J., Garside, S., Dupras, D.M., Erwin, P.J. and Montori, V.M. (2010), Instructional design variations in internet-based learning for health professions education: A systematic review and meta-analysis. *Academic Medicine*, **85** (5), 909-922.

Full Text: [2010\Aca Med85, 909.pdf](2010/Aca%20Med85,%20909.pdf)

Abstract: Purpose A recent systematic review (2008) described the effectiveness of Internet-based learning (IBL) in health professions education. A comprehensive synthesis of research investigating how to improve IBL is needed. This systematic review sought to provide such a synthesis. Method The authors searched MEDLINE, CINAHL, EMBASE, Web of Science, Scopus, ERIC, TimeLit, and the University of Toronto Research and Development Resource Base for articles published from 1990 through November 2008. They included all studies quantifying the effect of IBL compared with another Internet-based or computer-assisted instructional intervention on practicing and student physicians, nurses, pharmacists, dentists, and other health professionals. Reviewers working independently and in duplicate abstracted information, coded study quality, and grouped studies according to inductively identified themes. Results From 2,705 articles, the authors identified 51 eligible studies, including 30 randomized trials. The pooled effect size (ES) for learning outcomes in 15 studies investigating high versus low interactivity was 0.27 (95% confidence interval, 0.08-0.46; P = .006). Also associated with higher learning were practice exercises (ES 0.40 [0.08-0.71; P = .01]; 10 studies), feedback (ES 0.68 [0.01-1.35; P = .047]; 2 studies), and repetition of study material (ES 0.19 [0.09-0.30; P < .001]; 2 studies). The ES was 0.26 (-0.62 to 1.13; P = .57) for three studies examining online discussion. Inconsistency was large (I(2) >= 89%) in most analyses. Meta-analyses for other themes generally yielded imprecise results. Conclusions Interactivity, practice exercises, repetition, and feedback seem to be associated with improved learning outcomes, although inconsistency across studies tempers conclusions. Evidence for other instructional variations remains inconclusive.

Keywords: Authors, Computer-Assisted, Computer-Assisted-Instruction, Continuing Medical-Education, Crossover Trial, Dentists, Education, Effectiveness, Embase, Feedback, Health, Information, Intervention, Knowledge, Learning, Medline, Nurses, Nursing-Students, Online, Outcomes, Outcomes Research, Pharmacists, Physicians, Practice, Randomized Controlled-Trial, Research, Review, Science, Scopus, Spaced Education, Systematic, Systematic Review, University, Web of Science, Web-Based Instruction

? Davis, O.C. and Nakamura, J. (2010), A proposed model for an optimal mentoring environment for medical residents: A literature review. *Academic Medicine*, **85** (6), 1060-1066.

Full Text: [2010\Aca Med85, 1060.pdf](2010/Aca%20Med85,%201060.pdf)

Abstract: Purpose To develop a model of the optimal mentoring environment for medical residents. The authors propose that such an environment is a function of a relationship that rests upon a set of interactional foundations that allow a protege to capitalize on the strengths of the mentor, and it facilitates behaviors that will enable the protege to develop and internalize the requisite knowledge, skills, and attitudes (KSAs) as fully as possible. Method The authors searched the literature using Web of Science and Google Scholar in 2007-2008 to identify articles addressing the mentoring process and the context in which it occurs (mentoring environment), and the effect both have on KSA development. The authors distilled the attributes of a good mentor that were consistent across the 20 papers that met inclusion criteria and described good mentoring of residents or curricula for training mentors or residents. Results The authors identified six interactional foundations that underlie the optimal mentoring relationship: emotional safety, support, protege-centeredness, informality, responsiveness, and respect. These foundations enable proteges to engage in four key developmental behaviors: exercising independence, reflecting, extrapolating, and synthesizing. Conclusions This model identifies mentoring practices that empower proteges to engage in developmental behaviors that will help them become the best physicians possible. Educators may use this model to develop training tools to teach attendings how to create an optimal mentoring environment. Researchers can use the model to help guide their future investigations of mentoring in medicine.

Keywords: Academic Medicine, Authors, Core Competences, Development, Environment, Faculty, Google Scholar, Knowledge, Literature, Literature Review, Medical, Medicine, Model, Papers, Physicians, Researchers, Residents, Review, Safety, Science, Students, Supervision, Training, Training-Program, Web of Science

? Wiggins, M.N. (2010), A meta-analysis of studies of publication misrepresentation by applicants to residency and fellowship programs. *Academic Medicine*, **85** (9), 1470-1474.

Full Text: [2010\Aca Med85, 1470.pdf](2010/Aca%20Med85,%201470.pdf)

Abstract: Purpose Many studies from various fields of medicine about the accuracy of residency and fellowship applications have reported disturbing percentages of candidates with publication misrepresentation on their applications. However, other similar studies have found much lower percentages. No evaluation of these types of studies is currently available to explain this disparity. Therefore, this study evaluated the wide range of percentages of applicants with publication misrepresentation reported in the literature. Method Studies of residency and fellowship applicant misrepresentation were identified and reviewed. Using uniform inclusion criteria, the data reported by each study were recalculated to determine the percentage of candidates with misrepresentation. Results Thirteen out of 18 studies (eight residency and five fellowship) found in the literature from 1995 to 2008 reported sufficient details to perform a recalculation. The most common type of misrepresentation reported was listing nonexistent articles, followed by errors in authorship order and nonauthorship. After recalculation, the mean percentage of candidates with misrepresentation per applicant pool decreased significantly (7.2% to 4.9%, P = .03048). No study characteristic, such as sample size, was found to be predictive of the percentage of applicants with misrepresentation. No difference was found in the percentage of applicants with misrepresentation in residency versus fellowship programs. Conclusions The variance in study results of misrepresentation decreases when uniform inclusion criteria are applied. Caution must be used in directly comparing the results of these studies as originally reported. Program directors should be aware that self-promotion in the authorship list is a common form of misrepresentation.

Keywords: Accuracy, Authorship, Disparity, Evaluation, Literature, Medicine, Meta-Analysis, Publication, Residency

? Buchanan, I.M. and Besdine, R.W. (2011), A systematic review of curricular interventions teaching transitional care to physicians-in-training and physicians. *Academic Medicine*, **86** (5), 628-639.

Full Text: [2011\Aca Med86, 628.pdf](2011/Aca%20Med86,%20628.pdf)

Abstract: Purpose To systematically review and describe published interventions about teaching continuity-of-care best practices, embodied by transitional care, to physician-trainees and physicians. Method The authors performed a systematic review of interventions indexed in PubMed, ISI Web of Science, Educational Resources Information Center, professional society Web sites, education databases, and hand-selected references. English-language articles published between 1973 and 2010 that demonstrated purposeful, directed education of physician-trainees and physicians on topics consistent with the contemporary definition of transitional care were included. Abstracted data included intended audience, duration/intensity, objectives, resources used, learner assessment, and curricular evaluation method. Results A dramatic increase in the number of published interventions teaching transitional care was noted in the last 10 years. Learners included preclinical medical students through attending physicians and also included allied health professionals. Brief, self-limited interactions in large groups were the most frequent mode of interaction. A wide array of objectives and resources used were represented. Most interventions provided a method for assessing knowledge acquisition by the learner; however, few interventions provided a mechanism for eliciting feedback from learners. Conclusions Proficiency in providing transitional care is an essential skill for medical practitioners. Historically, there have been few curricular interventions teaching this topic; however, recently a dramatic increase in the number of interventions has occurred. A diverse range of learners, modes of delivery, and intended objectives are represented. In establishing a pooled description of published interventions, this review provides a comprehensive and novel resource for educators charged with designing curricula for all medical professionals.

Keywords: Assessment, Authors, Care, Databases, Education, Elders, Evaluation, Feedback, Follow-up, Handovers, Hospital Discharge, Interventions, ISI, Knowledge, Mechanism, Medical, Older-Adults, Patterns, Physicians, Professional, Program, Pubmed, Review, Science, Settings, Students, Systematic, Systematic Review, Topics, Trial, Web of Science

# Title: Academic Psychiatry

Full Journal Title: Academic Psychiatry

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ko, K. and Goebert, D. (2011), Factors influencing consent to having videotaped mental health sessions. *Academic Psychiatry*, **35** (3), 199-201.

Full Text: 2011\Aca Psy35, 199.pdf

Abstract: Objective: The authors critically reviewed the literature regarding factors influencing consent to having videotaped mental health sessions. Methods: The authors searched the literature in PubMed, PsycINFO, Google Scholar, and Web of Science from the mid-1950s through February 2009. Results: The authors identified 27 studies, of which 19 (73%) examined general practice. Only 4 (15%) were in mental health. Most patients agree to be videotaped when asked. Those who did not consent tended to be female and younger, with previous psychiatric history or psychological distress. The data are mixed about whether psychiatric patients felt inhibited in videotaped sessions. Conclusion: The mental health literature in this area is limited and dated. Implications for practice are drawn inferentially from the general-practice literature. Recommendations for increasing the consent rate include building a relationship with patients before asking them for videotaping and, when asking, explaining the educational value and specific purpose of the recording. Academic Psychiatry 2011; 35: 199-201.

Keywords: Authors, Distress, General Practice, General-Practice, Google Scholar, Health, History, Literature, Mental Health, Methods, Practice, Psychotherapy, Pubmed, Science, Web of Science

# Title: Academic Radiology

Full Journal Title: [Academic Radiology](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=12985&_auth=y&_acct=C000048059&_version=1&_urlVersion=0&_userid=1516938&md5=8bd9f19ddd6355dc7c59958b0f664e22)

ISO Abbreviated Title: Acad. Radiol.

JCR Abbreviated Title: Acad Radiol

ISSN: 1076-6332

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Assoc Univ Radiologists

Publisher Address: 820 Jorie Blvd, Oak Brook, IL 60523-2251

Subject Categories:

Radiology, Nuclear Medicine & Medical Imaging: Impact Factor 1.644, 41/84 (2005)

? Hunter, T.B. (1994), Point-counterpoint. Plagiarism: What is it, whom does it offend, and how does one deal with it? *Academic Radiology*, **1** (2), 191-193.

Full Text: 1994\Aca Rad1, 191.pdf

Abstract: In the article entitled “Plagiarism: What Is It, Whom Does It Offend, and How Does One Deal with It?” [1], John D. Armstrong II presents a scholarly account of the following: “What constitutes plagiarism, and how is it so judged? Whom does plagiarism offend, and how does one respond when it is discovered? How does one avoid plagiarism?” Dr. Armstrong first presents a short case history as a background for his article. In the case history, a young university radiologist recognizes his own writing in a professional journal. Unfortunately, the young radiologist is not given credit for his work, and the writing is attributed to another person, who happens to be a revered figure in the young radiologist’s subspecialty. Because the young radiologist is afraid of being harmed professionally by the plagiarist, he elects to pursue no formal action.

There are several reasons why authors are responsible for formally citing the work of others in any scientific communication. Such citations give due credit, place one’s work in context with those of others, and leave a paper trail. Such a paper trail is an important path toward finding sources of error or sources of inspiration. In other words, “citations assign credit as well as responsibility”.

Baker, D.R. and Jackson, V.P. (2000), Misrepresentation of publications by radiology residency applicants. *Academic Radiology*, **7** (9), 727-729.

Full Text: [2000\Aca Rad7, 727.pdf](2000/Aca%20Rad7,%20727.pdf)

Abstract: Rationale and Objectives. The authors’ purpose was to determine the extent of misrepresentation of research publications by radiology resident applicants.

Materials and Methods. The authors reviewed 379 consecutive applications, including curricula vitae, for a radiology residency program in 1996. All reported publications and “in-press” articles were checked by means of a MEDLINE search.

Results. of the 379 applicants, 108 were from medical schools in the United States, and 271 were from international medical schools. Seventy-three applicants listed articles published or in press on their applications (24 U.S., 49 international applicants). of 286 separate citations in the applications, 105 were found with the MEDLINE search, and 181 were not found. of the latter, 168 cited journals were not indexed in MEDLINE or the applicants did not include sufficient information to verify their existence. Thirteen citations (from eight applicants; three U.S., five international) were not found even though they cited journals indexed by MEDLINE.

Conclusion. of all applicants reporting publications, 11% likely misrepresented them on their applications. A large percentage of citations, however, could not be verified because of insufficient information in the citation or claimed publication in a journal not available on MEDLINE. Radiology residency program directors should be aware of this uncommon, but important, problem.

Keywords: Fellowships

? Rahman, M., Haque, T.L. and Fukui, T. (2005), Research articles published in clinical radiology journals: Trend of contribution from different countries. *Academic Radiology*, **12** (7), 825-829.

Full Text: [2005\Aca Rad12, 825.pdf](2005/Aca%20Rad12,%20825.pdf)

Abstract: Rationale and Objectives. To determine different countries’ trend of contribution to clinical radiology journals and its relationship with impact factor.

Materials and Methods. All the journals, which publish articles on clinical radiology, were selected from the category of Radiology and Nuclear Medicine group of journals, and articles published in these journals between 1991 and 2000 were searched for the authors’ affiliation using the Medline database. Then, share of research output of the top-ranking 20 countries was determined along with the trend over time. Also, the relationship of different countries’ contribution with the impact factor of journals was examined by cross-sectional time-series linear model.

Results. of total articles (38,359), the United States’ share for the selected journals in clinical radiology was 43.2% (16,582 articles) and ranked top in the world, followed by the United Kingdom (9.9%) and Japan (8.0%). The recent increase in the share was statistically significant for Japan, France, Germany, Italy, South Korea, Turkey, Spain, Switzerland, Austria, and China. On the other hand, the United States, United Kingdom, and Canada showed a significant negative trend. Among the top-ranking 10 countries, the US contribution was significantly higher to journals with high-impact factors, whereas the opposite was true for France.

Conclusion. The United States, United Kingdom, and Canada showed a negative trend over the last decade in terms of proportion of contribution of articles to the clinical radiology journals. However, only the United States published more articles in high-impact factor journals.

Keywords: Medline Database, Publication, Radiologic Research, Research Output, Research Productivity

? Mullins, M.E. (2010), Has the time come for bibliometrics and the *h*-index in *Academic Radiology*? *Academic Radiology*, **17** (7), 815-816.

Full Text: [2010\Aca Rad17, 815.pdf](2010/Aca%20Rad17,%20815.pdf)

Keywords: Bibliometrics, Quality

? Rad, A.E., Brinjikji, W., Cloft, H.J. and Kallmes, D.F. (2010), The h-index in *Academic Radiology*. *Academic Radiology*, **17** (7), 817-821.

Full Text: [2010\Aca Rad17, 817.pdf](2010/Aca%20Rad17,%20817.pdf)

Abstract: Rationale and Objectives: The h index is a recently developed tool to assess the impact of an author’s publications. The purpose of this study was to apply and evaluate the h indexes of US academic radiologists.

Materials and Methods: Radiology programs that participated in the residency match in 2009 were identified through the National Resident Matching Program’s Web site. One third of programs were randomly selected. The academic ranks (instructor, assistant professor, associate professor, professor, or chairperson) of faculty members were determined on the basis of information from the programs Web sites during October and November 2009. One third of radiologists at each randomly selected institution were randomly selected for detailed analysis. For each radiologist, an automatically computed h index was obtained through the Scopus database. The h index was compared across ranks using analysis of variance. A multivariate logistic regression analysis was also performed to determine the best predictors (number of publications, number of citations, h index, and number of citations per publication) of academic rank.

Results: Sixty hundred eighty-three radiologists from 47 programs were included in this study. The mean h indexes were 1.1±2.7 for instructors, 2.3±4.1 for assistant professors, 6.2±7.2 for associate professors, 12.5±10.8 for full professors, and 12.0±9.5 for chairpersons. There was a significant relationship between h index and academic rank (P<.0001). Multivariate logistic regression analysis demonstrated that h index (P<.0001) and number of publications (P<.0001) were the best predictors of academic rank.

Conclusion: There exists a significant relationship between h index and academic rank, with h index increasing with academic rank. These results offer a benchmark for comparing a given academic radiologist to national averages.

Keywords: h-Index, Radiology, Impact Factor

# Title: Academy of Management Journal

Full Journal Title: [Academy of Management Journal](http://proquest.umi.com/pqdweb?TS=0&JSEnabled=1&RQT=317&SK=2&ScQ=000024476&TS=1029995676)

ISO Abbreviated Title: Acad. Manage. J.

JCR Abbreviated Title: Acad Manage J

ISSN: 0001-4273

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Acad Management

Publisher Address: Pace Univ, PO Box 3020, 235 Elm Rd, Briarcliff Manor, NY 10510-8020

Subject Categories:

Business: Impact Factor 2.375, 7/54 (2000) SSCI

Management: Impact Factor 2.375, 6/60 (2000) SSCI

Gomez-Mejia, L.R. and Balkin, D.B. (1992), Determinants of faculty pay: An agency theory perspective. *Academy of Management Journal*, **35** (5), 921-955.

Full Text: [1992\Aca Man J35, 921.pdf](1992/Aca%20Man%20J35,%20921.pdf)

Abstract: This study tested 12 hypotheses on the determinants of faculty pay using an agency theory perspective. The sample consisted of 353 professors of management. Data were collected from survey responses, curricula vitae, and the Social Science Citation Index. Results show that the primary determinants of faculty pay, in both institutions that grant doctorates and those that do not, are the number of top-tier journal publications a faculty member has authored and changes in institutional affiliation. Teaching performance and numbers of citations, second-tier publications, and books published affect pay allocations only for faculty members who have exceptional research records.

Keywords: Students Evaluations, Management Journals, Performance, Productivity, Instruction, University, Salaries, Departments, Economics, Validity

King, A.A. and Lenox, M.J. (2000), Industry self-regulation without sanctions: The chemical industry’s Responsible Care Program. *Academy of Management Journal*, **43** (4), 698-716.

Full Text: [A\Aca Man J43, 698.pdf](A/Aca%20Man%20J43,%20698.pdf)

Abstract: Industry self-regulation-the voluntary association of firms to control their collective action-has been proposed as a complement to government regulation. Proponents argue that the establishment of such structures may institutionalize environmental improvement, and critics suggest that without explicit sanctions, such structures will fall victim to opportunistic behavior. In a study of the Chemical Manufacturers Association’s Responsible Care Program, we investigate the predictions of these two contradictory perspectives. Our findings highlight the potential for opportunism to overcome the isomorphic pressures of even powerful self-regulatory institutions and suggest that effective industry self-regulation is difficult to maintain without explicit sanctions.

Keywords: Organizations, Management, Involvement, Innovation, Tool, PAC

# Title: Academy of Management Learning & Education

Full Journal Title: Academy of Management Learning & Education

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bedeian, A.G., Taylor, S.G. and Miller, A.N. (2010), Management science on the credibility bubble: Cardinal sins and various misdemeanors. *Academy of Management Learning & Education*, **9** (4), 715-725.

Full Text: [2010\Aca Man Lea Edu9, 715.pdf](2010/Aca%20Man%20Lea%20Edu9,%20715.pdf)

Abstract: This research-based essay presents survey results-collected from faculty in 104 PhD-granting management departments of AACSB-accredited business schools in the United States-regarding 11 different types of questionable research conduct, including data fabrication, data falsification, plagiarism, inappropriately accepting or assigning authorship credit, and publishing the same data or results in two or more publications. Findings suggest that instances of research misconduct covering a broad array of behaviors are not unknown to survey respondents.

Keywords: Authorship, Climate, Decision-Making, Ethics, Integrity, Knowledge, Others, Plagiarism, Publications, Publishing, Questions, Research, Scientific Misconduct, Survey

# Title: Accident Analysis and Prevention

Full Journal Title: [Accident Analysis and Prevention](http://sdos.ejournal.ascc.net/cgi-bin/sciserv.pl?collection=journals&journal=00014575)

ISO Abbreviated Title: Accid. Anal. Prev.

JCR Abbreviated Title: Accident Anal Prev

ISSN: 0001-4575

Issues/Year: 5

Journal Country/Territory: United States

Language: English

Publisher: Pergamon-Elsevier Science Ltd

Publisher Address: The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, England

Subject Categories:

Ergonomics: Impact Factor 0.754, / (2001); Impact Factor 0.820, 5/13 (2002) SSCI

Public, Environmental & Occupational Health: Impact Factor 0.754, / (2001); Impact Factor 0.820, 23/55 (2002) SSCI

Social Sciences, Interdisciplinary: Impact Factor 0.754, / (2001); Impact Factor 0.820, 9/56 (2002) SSCI

Transportation: Impact Factor 0.754, / (2001); Impact Factor 0.820, 3/11 (2002) SSCI

Cushman, L.A., Good, R.G. and States, J.D. (1991), Characteristics of motor vehicle accidents resulting in spinal cord injury. *Accident Analysis and Prevention*, **23** (6), 557-560.

Full Text: [1991\Acc Ana Pre23, 557.pdf](1991/Acc%20Ana%20Pre23,%20557.pdf)

Abstract: The majority of cases of spinal cord injury (SCI) occur during car crashes. Yet, relatively little is known about the precise accident factors involved. The present study investigated 30 cases of SCI in automobile drivers that occurred in a series of 91 spinal cord injuries. A matched control group was also studied. SCI drivers were not different from controls in terms of mortality, number of rollover crashes, alcohol use, citations for contributing human factors, nighttime accidents, or unfavorable weather and road conditions. However, SCI drivers less frequently used restraints. Results are discussed in terms of preventive measures, specifically, those concerning restraint use, alcohol use, and driving behavior.

Petridou, E., Skalkidou, A., Ioannou, N. and Trichopoulos, D. (1998), Fatalities from non-use of seat belts and helmets in Greece: A nationwide appraisal. *Accident Analysis and Prevention*, **30** (1), 87-91.

Full Text: [A\Acc Ana Pre30, 87.pdf](A/Acc%20Ana%20Pre30,%2087.pdf)

Abstract: It has been established that seat belt use by car occupants and helmet use by motorcycle riders substantially reduces the risk of serious and fatal injuries following accidents. No study, however, has evaluated the motor vehicle deaths that could be prevented in Greece by general use of these devices, even though this country has the highest mortality from motor vehicle accidents in the European Union. We have estimated the odds ratios (OR) for death rather than injury in a motor vehicle accident by seat belt use among occupants of passenger cars or helmet use among motorcycle riders, using a nationwide database in which persons killed or injured in road traffic accidents in 1985 and 1994 were recorded. The study base included 910 dead and 19511 injured persons for 1985 and 1203 dead and 22186 injured persons for 1994. The OR and 95% confidence intervals (CI) for death rather than injury was 0.69 (CI: 0.58 to 0.81, p < 10-5) for seat belt users versus nonusers and 0.64 (CI: 0.51 to 0.81; p < 10-3) for helmet users versus non-users. There was evidence that the protective effect of these passive safety devices increased from 1985 to 1994 probably reflecting technological improvements. The proportion of all deaths that could have been avoided if all car occupants used seat belts was estimated to 27%, whereas 38% of motorcycle deaths could have been avoided if all motorcycle riders used helmets. These proportions translate to about 500 deaths per year, mostly deaths among young men. (C) 1998 Elsevier Science Ltd. All rights reserved.

Keywords: Seat Belt Use, Helmet Use, Traffic Accidents, Prevention, Motorcycle Riders, Head-Injuries, Victims, Crash

Kmet, L., Brasher, P. and Macarthur, C. (2003), A small area study of motor vehicle crash fatalities in Alberta, Canada. *Accident Analysis and Prevention*, **35** (2), 177-182.

Full Text: [2003\Acc Ana Pre35, 177.pdf](2003/Acc%20Ana%20Pre35,%20177.pdf)

Abstract: This study examined the small area variation in motor vehicle crash fatality rates in the province of Alberta, Canada. Motor vehicle crash fatality rates per 100,000 population (1995–1997, inclusive) were determined for five geographic areas in the province. The rates showed substantial, statistically significant variation across areas, with fatality rates lowest in the urban areas of Calgary and Edmonton, and highest in the rural areas (south, central, and northern Alberta). Examination of area-level predictors––population density, impaired driving citation rates, education level, unemployment levels, and ethnicity––showed that population density and impaired driving rates were associated with motor vehicle crash fatality rates. There was a five-fold difference in annual motor vehicle crash fatality rates between rural (22.9/100,000) and urban areas (4.4/100,000), whereas annual impaired driving rates were around 1.8% in rural areas, compared with 0.6% in urban areas. Because of multicollinearity problems, it was not possible to estimate a multivariable Poisson regression model. In conclusion, rural areas in the province of Alberta demonstrate a significantly higher motor vehicle crash fatality rate, compared with urban areas.

Keywords: Traffic Accidents, Mortality, Small Area Study, Population Surveillance

# Title: Accountability in Research: Policies and Quality Assurance

Full Journal Title: [Accountability in Research: Policies and Quality Assurance](http://www.informaworld.com/smpp/title~db=all~content=t713453593~tab=issueslist)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0898-9621

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Carlin, A.P. (2003), Some bibliographic practices in interdisciplinary work: Accounting for citations in library and information sciences. *Accountability in Research: Policies and Quality Assurance*, **10** (1), 27-45.

Full Text: [2003\Acc Res Pol Qua Ass10, 27.pdf](2003/Acc%20Res%20Pol%20Qua%20Ass10,%2027.pdf)

Abstract: Interdisciplinary studies involve the use of concepts, methods and theories developed in other disciplines. Using sociology and library and information science as researchable fields, this paper examines how interdisciplinary presentations appropriate discipline-specific concepts. Itemizing materials in a bibliography is a claim to familiarity with the content of those materials. Bibliographic anomalies are apparent in papers by Elfreda Chatman, published in library and information science journals. Misspellings and disjunctive uses of material suggests that Chatman is unfamiliar with the literature bases she invokes. Working through texts and accompanying bibliographies, this article shows how the entailments of research programs that Chatman claims to use can be reflected back onto her own work. The article provides suggestions on how to make interdisciplinary studies more accountable to academic communities.

Keywords: Bibliography, Citation, Impression Management, Interdisciplinary, Scholarly Communication, Trust

? Foo, J.Y.A. (2009), Effect of bibliographical classification on the impact factor of science- and engineering-based journals. *Accountability in Research: Policies and Quality Assurance*, **16** (1), 1-12.

Full Text: [2009\Acc Res Pol Qua Ass16, 1.pdf](2009/Acc%20Res%20Pol%20Qua%20Ass16,%201.pdf)

Abstract: The simplest and widely used assessment of academic research and researchers is the journal impact factor (JIF). However, the JIF may exhibit patterns that are skewed towards journals that publish high number of non-research items and short turnover research. Moreover, there are concerns as the JIF is often used as a comparison for journals from different disciplines. In this study, the JIF computation of eight top ranked journals from four different subject categories was analyzed. The analysis reveals that most of the published items (> 65%) in the science disciplines were nonresearch items while fewer such items (< 22%) were observed in engineering-based journals. The single regression analysis confirmed that there is correlation (R-2 >= .99) in the number of published items or citations received over the two-year period used in the JIF calculation amongst the eight selected journals. A weighted factor computation is introduced to compensate for the smaller journals and journals that publish longer turnover research. It is hoped that the approach can provide a comprehensive assessment of the quality of a journal regardless of the disciplinary field.

Keywords: Analysis, Authors, Bibliographical Database, Citation, Citations, Concerns, Editors, Impact Factor, Indexing, Journals, Medical Journals, Peer-Reviewed Journals, Publication, Quality, Research, Researchers, Science, Self-Citation

? Foo, J.Y.A. (2009), A 9-year analysis of bibliographical trends for journals in the subject category of general and internal medicine. *Accountability in Research: Policies and Quality Assurance*, **16** (3), 127-152.

Full Text: [2009\Acc Res Pol Qua Ass16, 127.pdf](2009/Acc%20Res%20Pol%20Qua%20Ass16,%20127.pdf)

Abstract: For academic research outcomes, an important bibliometric scoring termed as the journal impact factor (JIF) is used when assessment of the quality of research is required. No known study has been conducted to explore the bibliographical trends of ‘Medicine, General & Internal’ journals indexed by the annual Journal Citation Reports. Data from the Journal Citation Reports and Web of Science database were extracted to formulate a comprehensive analysis. In this study, the trends of 15 journals (5 top ranked and 10 low ranked; 5 English and 5 non-English based) were selected and analysed over a 9-year period (starting from year 1999 to 2007). Using the year 1999 as the base year, the results showed that the JIF rose significantly for the selected top ranked journals (up to 180.9%) while the low ranked ones slipped in their JIF value (down to -44.4%). The observed upward or downward trend was caused by a combination of other bibliographical measures like citations, number of citable, and total items published. It is postulated that changes in bibliographical trends can be classified as editorial and non-editorial influences. The impacts of these influences on the 15 selected journals over the 9-year period were also discussed retrospectively.

Keywords: Assessment, Bibliographical Database, Bibliometric, Citation, Citation Analysis, Citations, Database, English, Impact, Impact Factor, Impact Factor, Indexing, Journal, Journal Citation Reports, Journal Impact, Journal Impact Factor, Journals, Outcomes, Quality, Research, Science, Trends, Web of Science

# Title: Accounting, Business and Financial History

Full Journal Title: [Accounting, Business and Financial History](http://weblinks3.epnet.com/authHjafDetail.asp?tb=1&_ua=bo+B%5F+db+buhjnh+bt+TD++%225AU%22+BD54&_ug=sid+3BE5FDC8%2D7732%2D49C0%2D964F%2D1F344691324F%40sessionmgr2+dbs+buh+268E&_us=sm+ES+E6C7&_uso=st%5B0+%2DTD++%225AU%22+tg%5B0+%2D+db%5B0+%2Dbuh+op%5B0+%2D+h); [Accounting, Business and Financial History](http://www.ingentaconnect.com/content/routledg/rabf); [Accounting, Business and Financial History](http://taylorandfrancis.metapress.com/(4rmckr55oxmidb55jwdzjp45)/app/home/journal.asp?referrer=parent&backto=linkingpublicationresults,1:100111,1)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Anderson, M. (2002), An analysis of the first ten volumes of research in *Accounting, Business and Financial History*. *Accounting, Business and Financial History*, **12** (1), 1-24.

Full Text: [2002\Acc Bus Fin His12, 1.pdf](2002/Acc%20Bus%20Fin%20His12,%201.pdf)

Abstract: Although numerous studies have focused upon the publishing patterns of leading academic accounting journals, the area of accounting history has largely been neglected. This paper uses standard content and citation techniques to analyse the 155 articles published in the first ten volumes of *Accounting, Business and Financial History* across the period 1990 to 2000. It highlights the leading individual and institutional contributors to ABFH, the major foci of their studies and the journals, articles and scholars exerting the greatest influence upon ABFH authors.

Keywords: Accounting History, ABFH, Publishing Patterns, Content Analysis, Citation Analysis

# Title: Accounting Organizations and Society

Full Journal Title: [Accounting Organizations and Society](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5957&_auth=y&_acct=C000048059&_version=1&_urlVersion=0&_userid=1516938&md5=df547b63548816837df75301b191984c)

ISO Abbreviated Title: Account. Organ. Soc.

JCR Abbreviated Title: Account Org Soc

ISSN: 0361-3682

Issues/Year: 7

Journal Country/Territory: England

Language: English

Publisher: Pergamon-Elsevier Science Ltd

Publisher Address: The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, England

Subject Categories:

Business, Finance: Impact Factor 0.343, / (2001)

Solomon, I. and Trotman, K.T. (2003), Experimental judgment and decision research in auditing: The first 25 years of *AOS*. *Accounting*, *Organizations and Society*, **28** (4), 395-412.

Full Text: [2003\Acc Org Soc28, 395.pdf](2003/Acc%20Org%20Soc28,%20395.pdf)

Abstract: We review the papers published in *Accounting*, *Organizations and Society* (*AOS*) during the period 1976–2000 that report auditing judgment and decision experiments. We also review the *AOS* papers during the same period that attempt to influence the future directions of such studies. Our review is focussed on describing the characteristics and quantity of such papers and assessing their impact on the scholarly literature. We employ citation data and analysis as the primary means of judging scholarly impact and we draw comparisons with other leading research journals. Our inquiry and analysis reveals that *AOS* papers reporting auditing judgment and decision experiments have been a significant component of the audit judgment and decision literature, although the impact of the *AOS* papers is less than that of papers appearing in the other leading journals. For the *AOS* future-directions papers, however, we find a relatively large number and citations that compare favorably with citations of both papers reporting experiments and future-direction papers in other leading journals.

Keywords: Auditors Judgments, Belief-Adjustment Model, Experience, Hypothesis Generation, Impact, Independence, Knowledge, Performance, Research, Revision, Risk Judgments, Task Complexity

# Title: Accounts of Chemical Research

Full Journal Title: Accounts of Chemical Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Salem, L. (1986), Self-citation and ethical transgression. *Accounts of Chemical Research*, **19** (11), 376.

Full Text: [1986\Acc Che Res19, 376.pdf](1986/Acc%20Che%20Res19,%20376.pdf)

# Title: ACI Materials Journal

Full Journal Title: ACI Materials Journal

ISO Abbreviated Title: ACI Mater. J.

JCR Abbreviated Title: ACI Mater J

ISSN: 0889-325X

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Amer Concrete Inst

Publisher Address: 38800 International Way, Country Club Drive, PO Box 9094, Farmington Hills

Subject Categories:

Construction & Building Technology: Impact Factor 0.552, 3/26

Materials Science: Impact Factor 0.552, 76/159

Ali, M.T. and Chang, W.F. (1994), Strength properties of cement-stabilized municipal solid-waste incinerator ash masonry bricks. *ACI Materials Journal*, **91** (3), 256-263.

Abstract: This research was carried out to determine the strength and durability of bricks made with municipal solid waste incinerator fine ash, using cement and limestone screenings. The ash was obtained from a waste-to-energy (WTE) facility as a combined ash (CA) in Miami, Florida. Different cement contents ranging from 4 to 10 percent were used. The results confirmed that bricks with high compressive strength and modulus of rupture can be produced under static compaction pressure of 6 and 12 ksi (41.37 and 82.74 MPa) using nominal amounts of portland cement. The soaked compressive strength and modulus of rupture were also improved by adding small amounts of cement. A 28-day air-dry compressive strength as high as 7500 psi (51.71 MPa) was obtained at 40 percent ash and 10 percent cement content. Modulus of rupture above 750 psi (5.171 MPa) was also achieved in this investigation. In addition, the bricks showed excellent resistance to abrasion and a lower water absorption.

Keywords: Abrasion, Absorption, Compressive Strength, Flexural Strength, Fly Ash, Stabilization, Wastes, Water, Fly-Ash

# Title: ACIMED

Full Journal Title: ACIMED

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Arencibia Jorge, R. and Perezleo Solorzano, L., Achón Veloz, G. and Araújo Ruiz, J.A. (2001), La informática biomedical desde una perspectiva bibliométrica. *ACIMED*, **9** (3), 201-208.

Full Text: [2001\ACIMED9, 201.pdf](2001/ACIMED9,%20201.pdf)

Abstract: A bibliometric study was conducted to determine the development of biomedical informatics in the last decade of the 20th century. Thirty-four journals specialized in this field and indexed by the Institute for Scientific Information of Philadelphia were selected and the Journal Citation Report covering the evaluated period was consulted to determine the average impact factor as well as the increase index of the impact factor of each of them. Also the general average impact factor of journals published between 1992 and 1999 and the general increase index of the general average impact factor were estimated. The results were shown in graphs and the 10 top journals according to the highest average impact factor reached, the highest increase index of their impact factor and the highest impact factors accrued in the evaluated period were recorded. Finally comments are made on the main applications of informatics in Biomedicine and the advantages of the analysis of citations made by the Institute for Scientific Information to assess the performance of a biomedical discipline.

Keywords: Informatica Medica, Bibliometria, Factor de Impacto, Analisis de Citas, Medical Informatics, Bibliometrics, Impact Factor, Citation Analysis

Spinak, E. (2001), Indicadores cienciométricos. *ACIMED*, **9** (Supl.), 42-49.

Full Text: [2001\ACIMED9S, 42.pdf](2001/ACIMED9S,%2042.pdf)

Abstract: Scientific indicators arise from the measurement of inputs and results of the scientific institution. Scientometrics develops methodologies for set up those indicators based on interdisplinary technics from the economics, statistics, management and documentation. The methodologies that are internationally accepted (Frascati Manual, Oslo Manual and Canberra Manual) constitute the classical references to measure the econocmic inputs and results, as well as the technological results of the research and development. However, there is no international consensus about how to measure and evaluate intellectual and academic production in the ways in which it is expressed in the editorial system, either in the interpretation of its impacts e influences. Defining bibliometrics, scientometrics and infometrics, as well as their scope and application, this paper presents alternative views to interpret current scientometric indicators, which greatly outcome from compilation of the Citation Index, published by the Institute for Scientific Information, and other similar databases. Particularly, an hypothesis is presented aiming at explaining the bias of the Citation Index in favour of the publications that belong to the mainstream of the developed countries, against those publications of similar quality published by Third World countries.

Keywords: Indicadores/Utilización, Bibliometria, Cienciometria, ley de Bradford, ley de Zipf, ley de Sengupta, ley de Lotka, Analisis de Citas, Factor de Impacto, Indicators/Utilization, Bibliometrics, Scientometrics, Bradford’s Law, Zinpf’s Law, Sengupta’s Law, Lotka’s Law, Citation Analysis, Impact Factor

Rousseau, R. (2001), Indicadores bibliométricos y econométricos en la evaluación de instituciones científicas. *ACIMED*, **9** (Supl.), 50-60.

Full Text: [2001\ACIMED9S, 50.pdf](2001/ACIMED9S,%2050.pdf)

Abstract: This article consists of two parts: the first part describes the evaluation of a small university it is based on scientometric data and aims mainly at the evaluation of internationally visible research. The second part shows how an econometric method (DEA: data enveloping analysis) can be used to include teaching and other aspects, e.g. fund raising, into the evaluation. Both approaches show how a body of bibliometric, scientometric and econometric theory can be applied to real world problems.

Keywords: Cienciometria, Investigacion, Evaluacion, Econometria/Métodos, Factor de Impacto, Analisis de Citas, Produccion Cientifica, Publicacion Electronica, Bibliometria, Universidades/Eficiencia, Universidades/Efectividad, Scientometrics, Research, Evaluation, Econometrics/Methods, Impact Factor, Citation Analysis, Scientific Production, Electronic Publishing, Bibliometrica Universities/Efficiency, Universities/Effectiveness

Worwell, I. (2001), Informetría: Explorando bases de datos como instrumentos de análisiss. *ACIMED*, **9** (Supl.), 115-121.

Full Text: [2001\ACIMED9S, 115.pdf](2001/ACIMED9S,%20115.pdf)

Abstract: This paper gives a sample of the research programmes of the Centre for Informetric Studies, Copenhaguen. It also describes informetrics as a sub-field of bibliometrics discussing its new approach, i.e. the combination of advan-ced information retrieval theories and methodologies with the scientific study of information flows. The Centre aims to apply bibliometric methods not only to scientometric studies and research evaluations of science and technology, but also the analysis of their societal, industrial and other special relations. This means an extension of the traditional bibliometric analyses to cover non-scholarly communities in which information produced, communicated and used. The author also appeals to LIS professionals to face the challenge of this new area of quantitative studies, learning to explore data bases also as a tool to carry out analytical work, emphasizing the possibilities for those professionals to raise their positions in the information work hierarchies, as well as to explore informetric techniques to support the management of decisions and policy making.

Keywords: Bibliometria, Informetria, Bases de Datos/Análisis, Bibliometrics, Informetrics, Databases/Analysis

Sanz Casado, E., Martín Moreno, C., García Zorita, C., Suárez Balseiro, C. and Lascurain Sánchez, M.L. (2002), La actividad científica española en ciencias médicas en el período 1991-1999. *ACIMED*, **10** (1).

Full Text: [2002\ACIMED10-Sanz.pdf](2002/ACIMED10-Sanz.pdf)

Abstract: The group of Spanish medical sciences researchers is studied. Unidimensional and relational bibliometric indicators are used to analyze the papers published by the researchers processed in the MEDLINE database from 1991 to 1999. The results show that the Spanish scientific production in medical sciences has raised in more than 70 %. Likewise, its weight concerning world production has increased from 1.4 % to 2 %. Biology-biochemistry, general medicine, neurosciences and nephrology-urology are the most published topics. A rise has also been observed in the size of the research groups and in the coauthorship index from 4.58 to 5.09 authors/document. The journal article has been the most used type of document to spread research. 15 of the 17 most productive journals are Spanish. The relational indicators utilized, which are based on the correspondence analysis, reveal a clear differentiation between institutional sectors, according to the topics in which their researchers work. Hospitals show their preference for clinical areas, whereas the universities prefer basic research areas. The scientific activity in the field of medical sciences has had a significant change in Spain. Most of the research activity is developed by the health sector, where applied investigation is made.

Keywords: Produccion Cientifica, Produccion Cientifica/Tendencias, Investigadores, Bibliometria, España, Scientific Production, Scientists, Bibliometry, Spain

Pérez Matos, N.E. (2002), La bibliografía, bibliometría y las ciencias a. *ACIMED*, **10** (3).

Full Text: [A\ACIMED10-Perez.pdf](A/ACIMED10-Perez.pdf)

Abstract: The fundamental characteristics revealing the upsurge of an incipient digital culture at present are described starting from the changes taking place in the so-called information society. Bibliography is presented as a new science in the complex bibliological-informational world, whereas bibliometry is defined as a metric science. The appearance and importance of publications in science, as well as the possibilities offered by the electronic formats are studied. Bibliometry is analyzed as a science that reckons from the descriptive elements of scientific documentation and from the need to assess the documental typology in order to attain results reflecting the scientific phenomenon with more accuracy. The significance of bibliometry for information and knowledge management is stressed and the librarian’s work is considered as the oldest and most professional in the organization of information.

Keywords: Procesamiento Automatizado de Datos, Bibliometria, Bibliografías, Ciencias de la Información, Firma Editora, Automatic Data Processing, Bibliometrics, Bibliography, Information Science, Publishing

Araújo Ruiz, J.A. and Arencibia Jorge, R. (2002), Informetría, bibliometría y cienciometría: Aspectos teórico-prácticos. *ACIMED*, **10** (4).

Full Text: [A\ACIMED10-Araujo.pdf](A/ACIMED10-Araujo.pdf)

Abstract: Mathematical methods have been applied to the study of scientific literature since the beginning of the last century. They gave origin to bibliometry. The eagerness for measuring the results of sciences in countries and organizations made possible the appearance of informetry and sciencetometrics. There is no doubt about the existance of similar characteristics among these 3 disciplines; however, each of them has its specific object and topic of study. This paper tries to define in a synthetized way the concept and object of these disciplines as well as some theoretical and practical aspects of the sciences to which they serve as instruments.

Keywords: Scientometrics, Informetrics, Bibliometrics, Mathematical Models, Information Science, Bibliometría, Modelos Matemáticos, Cienias de la Información

Perezleo Solórzano, L., Arencibia Jorge, R., Conill González, C., Achón Veloz, G. and Araújo Ruiz, J.A. (2003), Impacto de la Bioinformática en las ciencias biomédicas. *ACIMED*, **11** (4).

Full Text: [2002\ACIMED10-Perez.pdf](2002/ACIMED10-Perez.pdf)

Abstract: The advances reached by the genetic engineering and the development of new information technologies during the last decade, conditioned the emergence of a discipline that has created indissoluble bonds between the Computer Sciences and the Biological Sciences: the Bioinformatics. The present work demonstrates the impact of the Bioinformatics in the Medical Sciences, through the bibliometric analysis of MEDLINE, the most important database of the biomedical environment at the present time. The main applications of this discipline in the registrations obtained in MEDLINE were directed to the data management in the laboratory, the automation of experiments, the assembling of contiguous sequences, the prediction of functional domains in gene sequences, the alignment of sequences, the searches in databases of structures, the structure determination and prediction of macro-molecules, the molecular evolution and the phylogenetic trees. The medical specialties mostly influenced by the Bioinformatics were the Medical Genetics, Clinical Biochemistry, Pharmacology, Neurosciences, Medical Statistic, Immunology, Physiology and Oncology.

Keywords: Informatica Médica, Biologia Computacional, Bibliometria, Tecnologia de la Informacion, Medical Informatics, Computational Biology, Medline, Bibliometrics, Medical Informatics, Information Technology

Araújo Ruiz, J.A. and Arencibia Jorge, R. (2002), Informetría, bibliometría y cienciometría: Aspectos teórico-prácticos. *ACIMED*, **10** (4).

Full Text: [2002\ACIMED10-Araujo.pdf](2002/ACIMED10-Araujo.pdf)

Abstract: Mathematical methods have been applied to the study of scientific literature since the beginning of the last century. They gave origin to bibliometry. The eagerness for measuring the results of sciences in countries and organizations made possible the appearance of informetry and sciencetometrics. There is no doubt about the existance of similar characteristics among these 3 disciplines; however, each of them has its specific object and topic of study. This paper tries to define in a synthetized way the concept and object of these disciplines as well as some theoretical and practical aspects of the sciences to which they serve as instruments.

Keywords: Scientometrics, Informetrics, Bibliometrics, Mathematical Models, Information Science, Bibliometría, Modelos Matemáticos, Cienias de la Información

Perezleo Solórzano, L., Arencibia Jorge, R., Conill González, C., Achón Veloz, G. and Araújo Ruiz, J.A. (2003), Impacto de la Bioinformática en las ciencias biomédicas. *ACIMED*, **11** (4).

Full Text: [2003\ACIMED11-Perezleo.pdf](2003/ACIMED11-Perezleo.pdf)

Abstract: The advances reached by the genetic engineering and the development of new information technologies during the last decade, conditioned the emergence of a discipline that has created indissoluble bonds between the Computer Sciences and the Biological Sciences: the Bioinformatics. The present work demonstrates the impact of the Bioinformatics in the Medical Sciences, through the bibliometric analysis of MEDLINE, the most important database of the biomedical environment at the present time. The main applications of this discipline in the registrations obtained in MEDLINE were directed to the data management in the laboratory, the automation of experiments, the assembling of contiguous sequences, the prediction of functional domains in gene sequences, the alignment of sequences, the searches in databases of structures, the structure determination and prediction of macro-molecules, the molecular evolution and the phylogenetic trees. The medical specialties mostly influenced by the Bioinformatics were the Medical Genetics, Clinical Biochemistry, Pharmacology, Neurosciences, Medical Statistic, Immunology, Physiology and Oncology.

Keywords: Informatica Médica, Biologia Computacional, Bibliometria, Tecnologia de la Informacion, Medical Informatics, Computational Biology, MEDLINE, Bibliometrics, Medical Informatics, Information Technology

López Espinosa, J.A. and Díaz del Campo, S. (2003), Introducción al estudio bibliométrico de la bibliografía activa de Carlos J. Finlay. *ACIMED*, **11** (5).

Full Text: [2003\ACIMED11-Lopez.pdf](2003/ACIMED11-Lopez.pdf)

Abstract: The results from the retrospective and descriptive study aimed at knowing the features of active bibliography of Dr Carlos J Finlay published in journal articles are exposed. A procedure of bibliometric profile analysis was carried out in which the folliwing indicators were taking into account: the temporary extent of his scientific production, the researches published in Cuban and foreing journals, the articles he wrote as sole author and in colaboration, his original contribution’s in Spanish and other languages, his translations and the topics he discussed as a publicist. From 1864 to 1912, Finlay wrote a total of 187 articles published in 11 Cuban journals and 9 foreing journals, 168 of them as sole author. of a total numbers of 182 original works, 163 were written in Spanish. The other original works were written in English and Germany as well as 5 translation of texts from English and French. The most referred topics were yellow fever, cholera and eye diseases. The possible usefulness of this original study as a reference for further researches on Finlaist literature is established and the encouragement for the examination of other remarkable features of Cuban medical bibliography that remains unexplored.

Keywords: Estudios Retrospectivos, Estudios Descriptivos, Personajes, Bibliografia de Medicina, Fiebre Amarilla, Colera, Oftalmopatias, Bibliometria, Produccion Cientifica, Bibliografia de Medicina/Historia, Bibliografia Retrospectiva, Retrospective Studies, Epidemiology, Descriptive, Famous Persons, Bibliography of Medicine, Yellow Fever, Cholera, Eye Diseases, Scientific Production, Bibliography of Medicine/History, Bibliography, Bibliometrics, Cuba

Cañedo Andalia, R., Arencibia Jorge, R., Perezleo Solórzano, L. and Araújo Ruiz, J.A. (2004), La Colaboración Cochrane en Cuba. Parte VI. Producción de guías para la práctica clínica: Una visión desde la perspectiva de la base de datos MEDLINE. *ACIMED*, **12** (4).

Full Text: [2004\ACIMED10-Canedo.pdf](2004/ACIMED10-Canedo.pdf)

Abstract: AIM: To show the qualitative and quantitative features of information flow of medical practice guides processed by MEDLINE in 1993 and 2004. METHODS: The guides for medical practice procesed by MEDLINE were identified using search approach design for that purpose. The relevant of retrieved records was handy reviewed. The frecuency indexes were prepared for a variable group chosen according relevance to distinguish the study flow. The foremention indexes were conceived using the Procite software. The study of topic distribution was carried out using the Refvitz software, a tool for data mining created by Institute for Scientific Information. RESULTS: The identification of 6 350 clinical guides processed by MEDLINE in the years 1993 and 2004 was possible. These guides, written in 22 languages proceedings from 43 countries, were published in 1 094 different journals. According to country, The United States of America produced more than the half (53,5%) of the clinical guides published in MEDLINE. The most productive journal was Pediatrics from U.S.A containing 208 contributions. The most productive institutions were the American College of Obstetricians and Gynecologists, The American Heart Association, The American Academy of Pediatrics, The American College of Cardiology and The American Diabetes Association. The majority of the most treated thematic subgroups were concentrated in 4 areas: therapy of general diseases, cancer and malignant tumors as well as the infectious and cardiovascular diseases. CONCLUSION: Even though the predominance of the U.S.A in clinical guide production is unquestionable, the recognized trend of MEDLINE database to process mainly publications from U.S.A and also from English speaking countries could a disavantage for the results and positions occupied by other countries.

Keywords: Guías Para La Práctica Clínica, Informetría, Bibliometría, MEDLINE, Clinical Practice Guidelines, Informetrics, Bibliometrics, MEDLINE

# Title: ACM Transactions on Information Systems

Full Journal Title: ACM Transactions on Information Systems

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

# Title: The 227th ACS National Meeting, Anaheim, CA, March 28-April 1, 2004

Full Journal Title: The 227th ACS National Meeting, Anaheim, CA, March 28-April 1, 2004

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0097-6156

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Wu, Z.J. and Lee, K. (2004), Adsorption kinetics and thermodynamics of an organic dye by a mesoporous hybrid xerogel. *The 227th ACS National Meeting*, Anaheim, CA, March 28-April 1.

Abstract: This study examines the adsorption kinetics and thermodynamics of brilliant blue FCF (BBF) by a mesoporous hybrid xerogel derived from tetraethoxysilane (TEOS) and propyltriethoxysilane (PTES), templated by cetyltrimethylammonium bromide (CTAB). The effect of initial BBF concentration, temperature, pH, and ionic strength on the BBF adsorption from aqueous solution has been investigated. Results of the kinetic studies show that the kinetic data fit well with the pseudo second-order kinetic model. Initial adsorption rate increases with the increase in initial BBF concentration and temperature. At low temperature internal diffusion is probably the rate-limiting step of the adsorption. With increasing temperature, internal diffusion becomes less important. The equilibrium adsorption amount is found to increase with the increase in initial BBF concentration, temperature, solution acidity, and ionic strength. The thermodynamic analysis indicates that the adsorption is spontaneous and endothermic. Electrostatic attraction and hydrophobic interaction are suggested to be the main adsorption mechanisms.

# Title: ACS Symposium Series

Full Journal Title: [ACS Symposium Series](http://pubs.acs.org/page/books/index.html)

ISO Abbreviated Title: ACS Sym. Ser.

JCR Abbreviated Title: ACS Sym Ser

ISSN: 0097-6156

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Amer Chemical Soc, Washington

Publisher Address:

Subject Categories:

: Impact Factor

? Jonas, L.A., Rehrmann, J.A. and Eskow, J.M. (1975), Kinetics of trace gas adsorption from contaminated air. *ACS Symposium Series*, **17**, 110-121.

Full Text: [1960-80\ACS Sym Ser17, 110.pdf](1960-80/ACS%20Sym%20Ser17,%20110.pdf)

Abstract: A study was made of the kinetics of trace gas adsorption from contaminated air flowing into beds of activated carbon arranged in series. The purpose of the study was to determine if it were possible to predict the period of time for which the discharge flow, emitted to the atmosphere from two carbon filters in series, would not exceed an environmentally imposed limit on concentration which was below the sensitivity of existing monitoring equipment. The results of the study showed that (1) gas adsorption by carbon beds in series was equivalent to adsorption by a single bed with a proportionate increase in depth, (2) the present equations describing gas adsorption kinetics were applicable to carbon beds in series, (3) the gas concentration exiting the first carbon filter, monitored by a relatively insensitive alarm, could serve to predict the subsequent time period during which the concentration emitted from the second filter would never exceed the imposed emission standards.

? Harris, D.J. (1984), 2,3,7,8-tetrachlorodibenzo-p-dioxin sampling methods. *ACS Symposium Series*, **267**, 27-35.

Full Text: [1984\ACS Sym Ser267, 27.pdf](1984/ACS%20Sym%20Ser267,%2027.pdf)

Abstract: From October 1982 to October 1983, the Emergency Planning and Response Branch of Region 7 of the United States Environmental Protection Agency and its contractors collected approximately 8,000 environmental samples for analysis of 2, 3, 7, 8-tetrachlorodibenzo-para-dioxin (TCDD). The majority of these samples have been collected and analyzed at an average cost of $700 per sample. This includes per diem, labor, equipment, expendable supplies, transportation, and $400 per analysis by contract laboratories. An evaluation of this data has suggested that field sampling and sample handling methods have a significant impact upon the precision and accuracy of the resulting data which, in turn, impact the cost and feasibility of various remedial options.

Some of the results from sampling at depths to determine the extent of vertical migration of TCDD have been puzzling. Depth samples have been collected in 6- to 12-inch increments down to a maximum depth of 4 feet. For

? Desrosiers, P.E. (1987), National dioxin study. *ACS Symposium Series*, **338**, 34-53.

Full Text: [1987\ACS Sym Ser338, 34.pdf](1987/ACS%20Sym%20Ser338,%2034.pdf)

Abstract: This report presents the results of EPA’s investigation of potential 2,3,7,8-TCDD (dioxin) contamination. The study represents a two-year, nationwide, multi-media evaluation initiated at the request of the U.S. Congress in 1983. The majority of dioxin contamination at Tier 1, 1a, 2 and 2a sites remained on-site. At sites where concentrated 2,4,5-TCP production wastes were stored or disposed, 2,3,7,8-TCDD concentrations were as high as 356 ppm. At most sites, however, 2,3,7,8-TCDD levels in soil were usually in the ppb range. In fish samples from nearby lakes and streams, 2,3,7,8-TCDD was measured in terms of ppt. Only two Tier 3 sites were extensively contaminated and comprised large facilities handling 2,4,5-T, 2,4,5-TP and 2,4,5-TCP with extent of contamination limited to one or two soil samples above 1 ppb. CDDs and CDFs were present in stack emissions from all sources tested in Tier 4 and most, but not all, of the combustion source categories reported in the literature. CDD and CDF emissions from some sources have estimated risks to the most exposed individual of 10-5 or more; these sources include a secondary copper smelting facility, a sewage sludge incinerator, and some municipal incinerators. At Tier 5 pastureland, rice field, and sugarcane sites, 2,3,7,8-TCDD levels in contaminated soils ranged from 0.6-564 ppt, with 67 percent below 5 ppt; levels in fish filets were between 8 and 23 ppt. At the three Tier 6 regionally selected sites, none was extensively contaminated. At one site, however, groundwater contamination was found at the 0.07-0.10 ppt level in three samples. The Tier 7 investigation established the prevalence of 2,3,7,8-TCDD in the environment: 2,3,7,8-TCDD was detected infrequently and at very low levels in background soil samples with the highest level being 11.2 ppt.

? Kociba, R.J. (1987), Animal toxicity studies of 2,3,7,8-tetrachlorodibenzo-p-dioxin derivation of lifetime exposure control limit recommendations for humans. *ACS Symposium Series*, **338**, 54-67.

Full Text: [1987\ACS Sym Ser338, 54.pdf](1987/ACS%20Sym%20Ser338,%2054.pdf)

Abstract: of the multiple toxicity studies performed with TCDD, those deemed most useful as the basis for derivation of human lifetime exposure control limit recommendations are the animal lifetime dose-response (carcinogenicity) studies, and the mechanistic studies wherein TCDD has been categorized as not being a mutagen nor possessing potential to interact directly with DNA. Multiple studies concur in reporting that the carcinogenic response noted in the animal studies with TCDD was reflective of a promoter mechanism rather than an initiator mechanism. While control limit recommendations for TCDD were originally derived by some regulatory agencies on a non-threshold assumption for extrapolation from the animal studies to humans, (assuming cancer initiation potential), more recently other regulatory agencies have utilized the newer data indicating a promoter (rather than initiator) mechanism as the valid basis for a threshold-based method of extrapolation from these animal studies to humans. Overall evaluation of all pertinent data indicates it is scientifically valid to derive the human lifetime control limit recommendations for TCDD through the use of a threshold-based process of extrapolation from the animal lifetime (carcinogenicity) studies.

? Miller, G.C. and Zepp, R.G. (1987), 2,3,7,8-tetrachlorodibenzo-p-dioxin: Environmental chemistry. *ACS Symposium Series*, **338**, 82-93.

Full Text: [1987\ACS Sym Ser338, 82.pdf](1987/ACS%20Sym%20Ser338,%2082.pdf)

Abstract: For molecules of its size and molecular weight, 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) is one of the most toxic, least water soluble, least volatile, and most resistant to thermal and biological transformations. The combination of these properties has presented a challenging problem in assessing human hazards ascribable to TCDD because, although exposure concentrations are often low, the time frame for transport and most degradative processes in the environment is generally long. Under normal environmental conditions the only transformation process that is fairly rapid for dioxins is photolysis.

? Marple, L., Brunck, R., Berridge, B. and Throop, L. (1987), Experimental and calculated physical constants for 2,3,7,8-tetrachlorodibenzo-p-dioxin. *ACS Symposium Series*, **338**, 105-113.

Full Text: [1987\ACS Sym Ser338, 105.pdf](1987/ACS%20Sym%20Ser338,%20105.pdf)

Abstract: The measurement of water solubility, water-octanol and water-soil partition coefficients presented several unique challenges. Novel experimental methods and data are reported for these physical constants. In some cases, experimental data is at odds with earlier published values. Comprehensive comparison of all available estimated, calculated, and experimental data are presented. The new values impact the calculation of the mobility of dioxin in soil, as well as other distribution properties.

? Freeman, R.A., Hileman, F.D., Noble, R.W. and Schroy, J.M. (1987), Experiments on the mobility of 2,3,7,8-tetrachlorodibenzo-p-dioxin at times-beach, Missouri. *ACS Symposium Series*, **338**, 114-130.

Full Text: [1987\ACS Sym Ser338, 114.pdf](1987/ACS%20Sym%20Ser338,%20114.pdf)

Abstract: The Times Beach Dioxin Research Station was constructed in 1984 under the direction of the University of Missouri and the Missouri Department of Natural Resources. The station offers investigators the opportunity to conduct experiments under field conditions on a well characterized soil. During the Summer of 1984, a series of six experiments were established by Monsanto at the station to study the environmental transport of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) under field conditions. The plots initially contained uniformly sized soil that was thoroughly mixed to provide a consistent TCDD level. The experiments were designed to study the movement of TCDD in soil. The experiments found that:

1. Vaporization and/or photodegradation at the surface of a contaminated soil is a loss mechanism for TCDD.

2. The presence of water and/or sunlight is an important environmental parameter for the mobility of TCDD. Water appears to weaken the binding of TCDD to the soil matrix.

3. TCDD accumulation by plants has a minimal impact on the soil concentration of TCDD.

? Umbreit, T.H., Hesse, E.J. and Gallo, M.A. (1987), Differential bioavailability of 2,3,7,8-tetrachlorodibenzo-p-dioxin from contaminated soils. *ACS Symposium Series*, **338**, 131-139.

Full Text: [1987\ACS Sym Ser338, 131.pdf](1987/ACS%20Sym%20Ser338,%20131.pdf)

Abstract: The bioavailability of TCDD from soils contaminated in the environment is an important determinant for risk assessment at TCDD contaminated sites. Literature reports indicate significant variation in bioavailability of TCDD from different sites. Soils from two of the major TCDD contaminated sites are compared for toxicity in guinea pigs and induction of aryl hydrocarbon hydroxylase (AHH) in rats. Times Beach, Missouri, soil is toxic and TCDD is highly bioavailable from this soil whereas Newark, New Jersey, soil is relatively non-toxic and has low bioavailability of TCDD. However, AHH induction in rats was approximately identical. These results confirm previous studies on bioavailability from these soils, and suggest that AHH induction may be an unreliable indicator of bioavailability.

? Houk, V.N. (1987), Uncertainties in dioxin risk assessment. *ACS Symposium Series*, **338**, 174-177.

Full Text: [1987\ACS Sym Ser338, 174.pdf](1987/ACS%20Sym%20Ser338,%20174.pdf)

Abstract: An evaluation of human health hazards posed by dioxin-contaminated soil in certain areas of Missouri illustrates specific uncertainties in dioxin risk assessment. These uncertainties include the relationship of studies in animals to effects in humans, the level and extent of contamination in the soil, the level of exposure to humans, and the character of the dose-response curve. Uncertainties in assessing risks posed by toxic substances in general are viewed from the standpoint of a 1985 report prepared by the Task Force on Risk Assessment and Risk Management for the Secretary, Department of Health and Human Services. The Task Force listed nine commonly used assumptions--which may also be called uncertainties.

? Paustenbach, D.J., Shu, H.P. and Murray, F.J. (1987), Assessing the potential human health-hazards of dioxin-contaminated soil. *ACS Symposium Series*, **338**, 178-213.

Full Text: [1987\ACS Sym Ser338, 178.pdf](1987/ACS%20Sym%20Ser338,%20178.pdf)

Abstract: Regulatory agencies worldwide are currently considering environmental standards for 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin, TCDD). This paper assesses the validity of assumptions which underlie the proposed approaches to setting limits for TCDD in the soil of residential and industrial sites. This paper also offers alternatives to these assumptions which are more justifiable scientifically, which profoundly affect the conclusions of the risk assessment, and which alter the magnitude of the recommended limits. Specifically, these assumptions concern 1) the quantities of soil typically ingested by children, 2) TCDD’s nongenotoxicity, 3) the extent of dermal contact with soil, 4) the concentration of airborne soil particles, 5) dioxin’s bioavailability in soil, 6) extrapolation of the dose response curve, and 7) appropriate risk criteria for small exposed populations. Two case studies are presented which illustrate the quantitative effect of these assumptions on the exposure estimates. Non-U.S. regulatory agencies which have incorporated TCDD’s nongenotoxicity in their approach have estimated the virtually safe dose (VSD) or acceptable daily dose (ADI) for TCDD at up to 10 pg/kg/day (10,000 fg/kg/day). The approaches of these agencies are compared and contrasted with the method used by the United States EPA whose risk estimates are higher and whose VSD is approximately 1,000-fold lower. An alternative analysis of the cancer data, which is more valid scientifically than approaches which have been based on regulatory policy, estimates a VSD of 130 pg/kg/day. In light of these many considerations, in residential areas a soil concentration of TCDD considerably in excess of 1 ppb should be acceptable. Soil concentrations in excess of 100 ppb in non-residental settings should amply protect the environment and public health.

? Kay, M. and Hazel, R. (1987), Solving dioxin contamination problems in Missouri. *ACS Symposium Series*, **338**, 216-220.

Full Text: [1987\ACS Sym Ser338, 216.pdf](1987/ACS%20Sym%20Ser338,%20216.pdf)

Abstract: This paper discusses measures taken by U. S. Environmental Protection Agency (EPA) Region VII, to deal with the problem of dioxin contamination in Missouri. Investigations which were carried out to identify the sites of contamination are described, along with temporary measures which were taken to protect public health and the environment from the dioxin contamination. The Region’s participation in an accelerated research effort to find solutions to the problem is detailed, particularly a project whereby the EPA mobile incinerator was brought to a farm site in Southwest Missouri to demonstrate its effectiveness in destroying dioxin. Finally, the paper describes cleanup activities which have been completed or are well underway as the Agency moves rapidly toward a comprehensive, final solution to the Missouri dioxin problem.

? Casanova, J.N. and Olfenbuttel, R.F. (1987), Military sites contaminated with 2,3,7,8-tetrachlorodibenzo-para-dioxin: Permitting remedial action research. *ACS Symposium Series*, **338**, 229-243.

Full Text: 1987\ACS Sym Ser338, 229.pdf

? Kleopfer, R., Gerken, M., Carasea, A. and Morey, D. (1987), Analytical support during remedial action at sites contaminated with 2,3,7,8-tetrachlorodibenzo-para-dioxin. *ACS Symposium Series*, **338**, 259-266.

Full Text: 1987\ACS Sym Ser338, 259.pdf

? Forrester, R.K., Marple, L. and Carson, C.P. (1987), Remediation of a dioxin-contaminated surface impoundment. *ACS Symposium Series*, **338**, 278-285.

Full Text: [1987\ACS Sym Ser338, 278.pdf](1987/ACS%20Sym%20Ser338,%20278.pdf)

Abstract: The complete remedial plan for cleanup of an unlined surface impoundment containing dioxin and solvent contaminated waste contains a brief history, preliminary sampling, pertinent scientific studies, development of a plan, site preparation, excavation of dioxin and solvent contaminated sludges and soils, on-site storage of wastes and ultimate disposal plans. Special emphasis is given to techniques for removal of dioxin from wastewater streams and a method of dewatering organic chemical sludge. The design and permitting of an on-site dioxin storage facility is described. Environmental and personal monitoring, safety, special protective equipment, decontamination procedures and other general considerations are briefly discussed.

? Marple, L., Rossi, D.D. and Throop, L. (1987), Removal of 2,3,7,8-tetrachlorodibenzo-para-dioxin from waste-water and well water: Coagulation and flocculation with aluminum salts. *ACS Symposium Series*, **338**, 286-290.

Full Text: 1987\ACS Sym Ser338, 286.pdf

? Peterson, R., Milicic, E., Novosad, C. and Rogers, C. (1987), Comparison of laboratory and field-test data in the chemical decontamination of dioxin-contaminated soils. *ACS Symposium Series*, **338**, 291-298.

Full Text: [1987\ACS Sym Ser338, 291.pdf](1987/ACS%20Sym%20Ser338,%20291.pdf)

Abstract: A series of patented (1) processes have been developed for chemical decontamination of soils contaminated with halogenated aromatics, including polychlorinated dibenzo-p-dioxins (PCDD), chlorinated benzenes, polychlorinated biphenyls and similar materials. These processes allow reduction of PCDD levels to less than 1 part per billion (ppb) in as little as two hours at moderate temperatures and pressures.

? Boyd, J., Williams, H.D., Thomas, R.W. and Stoddart, T.L. (1987), Destruction of dioxin contamination by pyrolysis techniques. *ACS Symposium Series*, **338**, 299-310.

Full Text: [1987\ACS Sym Ser338, 299.pdf](1987/ACS%20Sym%20Ser338,%20299.pdf)

Abstract: The J. M. Huber Corporation Advanced Electric Reactor (AER) pyrolysis process was field-demonstrated in a proof-of-principle test to show that dioxins in contaminated soil could be destroyed to less than 1 ppb. Testing was conducted at a former Herbicide Orange storage site at the Naval Battalion Construction Center (NCBC) in Gulfport, MS, during June 1985. Sample analysis of treated soil shows total isomer classes of tetra-, penta-, and hexapolychlorinated dibenzo-p-dioxins and tetra-, penta-, and hexapolychlorinated dibenzofurans to be less than 0.12 ppb. Herbicide compounds 2,4-D and 2,4,5-T and 2,4-di and 2,4,5/2,4,6-trichlorophenol compounds in the soil feedstock were also destroyed in the treated soil to levels below detectability. NCBC treated soil meets the Environmental Protection Agency delisting characteristic requirements. Lead and zinc are enriched in the baghouse material, which suggests that the process can be used for recovery of inorganic materials from contaminated soils that volatilize at the AER operating temperature. Test results clearly demonstrate the extremely high destruction capabilities of the AER process.

? Daily, P.L. (1987), Performance assessment of a portable infrared incinerator: Thermal-destruction testing of dioxin. *ACS Symposium Series*, **338**, 311-318.

Full Text: [1987\ACS Sym Ser338, 311.pdf](1987/ACS%20Sym%20Ser338,%20311.pdf)

Abstract: The Shirco Portable Unit was built in response to the increasing interest in on-site thermal treatment of waste and successfully demonstrated thermal destruction of dioxin in soil at Times Beach, Mo. The Portable Unit consists of a feed system, a primary chamber fired with electric infrared heating elements, a gas-fired secondary chamber, a wet gas scrubber, monitoring and control systems, and heating element power centers. All equipment is enclosed in a 45 foot trailer. Material is conveyed through the incinerator in a thin sheet on a wire mesh belt, giving all material the same residence time under controlled process conditions. One of the on-site tests performed by the Unit was the thermal destruction of dioxin at Times Beach, Mo. No dioxin was detected in the treated soil, flue gases, or scrubber effluent. The resulting Destruction and Removal Efficiencies (DRE) were greater than 99.9999 % and the particulate emissions were well below 0.08 gr/dscf required by RCRA.

? Colella, C. and Pansini, M. (1988), Lead removal from wastewaters using chabazite tuff. *ACS Symposium Series*, **368**, 500-510.

Full Text: [1988\ACS Sym Ser368, 500.pdf](1988/ACS%20Sym%20Ser368,%20500.pdf)

Abstract: The possible use of Campanian tuff, namely chabazite tuff, in the removal of lead from wastewaters has been evaluated, either in static experiments or testing fixed beds eluted by solutions of the pollutant with or without the addition of interfering cations. Through the computation of breakthrough curves, ion exchange dynamic data have been collected, pointing out the good performances of the beds, at least when the concentration of interfering cations is comparable to that of lead. On the ground of the results obtained, perspectives of use in lead decontamination from wastewaters of storage batteries manufacturing industries and ceramic factories have been at last foreseen.

? Rickenbacher, U., Jordan, S. and Mckinney, J.D. (1989), Structurally specific interaction of halogenated dioxin and biphenyl derivatives with iodothyronine-5’-deiodinase in rat-liver. *ACS Symposium Series*, **413**, 354-363.

Full Text: [1989\ACS Sym Ser413, 354.pdf](1989/ACS%20Sym%20Ser413,%20354.pdf)

Abstract: In in vitro studies, soluble, polar derivatives of polychlorinated biphenyls (PCB) and dibenzo-p-dioxins were shown to inhibit outer (phenolic) ring deiodination of 3,3’,5’-triiodothyronine (rT3) used as substrate for iodothyronine type I deiodinase activity in microsomal fractions of rat liver. Potent inhibition depended on the presence of lateral chlorination (3,5 in biphenyl or 2,3 in dibenzo-p-dioxin derivatives). The most potent PCB ligand exhibited a half-maximal inhibitory concentration similar to the Km (29 nM) of rT3. The results are in general agreement with our previous results with human thyroxine binding prealbumin and rat liver nuclear extracts that also show high affinity specific binding of these and related compounds to thyroxine specific binding sites. The functional structural characteristics of these polar PCB and dioxin derivatives involved in binding are in general similar to those found in toxic structures (underivatized) of this type. These relatively metabolically resistant deiodination inhibitor analogs may be useful as selective inhibitors facilitating the further study of biochemical and functional characteristics of protein interactions in thyroid hormone metabolism as well as the study of the possible importance of thyroid hormone antagonism in dioxin and related compound toxicity.

? Xiong, T.Y., Fleming, D.K. and Weil, S.A. (1991), Hazardous material destruction in a self-regenerating combustor ncinerator. *ACS Symposium Series*, **468**, 12-28.

Full Text: 1991\ACS Sym Ser468, 12.pdf

? Cobb, J.T., Mangelsdorf, C.P., Blachere, J.R., Banerjee, K., Reed, D., Crouch, C., Miller, C., Li, J.Q. and Trauth, J. (1993), High-strength portland-cement concrete containing municipal solid-waste incinerator ash. *ACS Symposium Series*, **515**, 264-275.

Full Text: [1993\ACS Sym Ser515, 264.pdf](1993/ACS%20Sym%20Ser515,%20264.pdf)

Abstract: The commercial use of solid wastes from energy-producing units, such as coal-fired boilers and oil shale combustors, has been practiced for several decades in the United States and in Europe. Recently, work by numerous organizations has begun on a variety of methods to render hazardous solid residues non-hazardous and to create beneficial uses for ash from municipal solid waste incinerators. One method for both purposes is the replacement of a portion of the fine aggregate in Portland cement concrete. The strength of the concrete drops significantly as the portion replaced increases, even with normal additives. This chapter presents the greatly improved strengths obtained with ash, which has been exposed to a new additive. These results show that up to 35% of the concrete can be made up of ash, while still obtaining compressive strengths of over 5000 psi (34.5 MPa). Micrographs of the original ash, ash and additive, concrete with ash but without additive, and concrete with ash and additive indicate the role of the additive. TCLP extractions of this novel new concrete and evaluations of its engineering properties have yet to be conducted. The economics, commercialization and extension of the development to other situations are discussed.

? Blankenship, A. and Matsumura, F. (1994), Changes in biochemical and molecular biological parameters induced by exposure to dioxin-type chemicals. *ACS Symposium Series*, **542**, 37-50.

Full Text: [1994\ACS Sym Ser542, 37.pdf](1994/ACS%20Sym%20Ser542,%2037.pdf)

Abstract: The XB cell hyperkeratinization assay was further developed as an in vitro bioassay tool that can be utilized for estimating 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) equivalents (TEQ) in a complex mixture of halogenated aromatic hydrocarbons. A spectrophotometric method was developed to quantitate hyperkeratinization. The hyperkeratinization response was found to be dose-dependent for 2,3,7,8-TCDD and 3,4,3’,4’-tetrachlorobiphenyl (TCB), a toxic congener with dioxin-type activity; however, 2,5,2’,5’-TCB, a relatively non-toxic congener, failed to cause hyperkeratinization. Our results indicate that this bioassay can be used to screen complex mixtures for dioxin-type activity and act as an important complement to chemical analysis. To facilitate future developments of bioassay approaches and eventually “biomarker” technologies, various biochemical changes occurring as specific lesions of dioxin-type chemicals were examined in our laboratory. A few of these biochemical changes may be viewed as potential indicators of the specific effects of dioxin-type chemicals. Particularly promising are the changes that we have observed in glucose transporter titers in adipose tissue which appear to be sensitive, unique, reproducible, and reliable, indicating their group specific toxic action.

# Title: Acta Agriculturae Zhejiangensis

Full Journal Title: [Acta Agriculturae Zhejiangensis](http://e42.cnki.net/KNS50/Navi/item.aspx?NaviID=1&BaseID=ZJNB&NaviLink=%e6%b5%99%e6%b1%9f%e5%86%9c%e4%b8%9a%e5%ad%a6%e6%8a%a5)

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ISSN:

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Yuan, Z.M. and Chen, H.P. (2007), Analysis on the papers published in *Acta Agriculturae Zhejiangensis* from year 2003 to 2005. *Acta Agriculturae Zhejiangensis*, **19** (1), 60-64.

Full Text: [2007\Act Agr Zhe19, 60.pdf](2007/Act%20Agr%20Zhe19,%2060.pdf)

Abstract: Statistical analysis on the bibliometric indicators, including quantity of papers, publishing latency, rate of foundation-supported papers, reference, mean citation rate, average number of authors per article, regional and institutional distributions by origin, and rate of international contributions, was done using literature metrological methods for the papers published in Acta Agriculturae Zhejiangensis from year 2003 to 2005. Evaluation on citation frequency, impact factor, immediacy index, cited rate, rate of

Keywords: academic journals, Acta Agriculturae Zhejiangensis, bibliometric indicator, citation indicator

# Title: Acta Alimentaria

Full Journal Title: [Acta Alimentaria](http://www.akademiai.com/(p0qfblq3yvgaxdyejavjk255)/app/home/journal.asp?referrer=parent&backto=linkingpublicationresults,1:119693,1)

ISO Abbreviated Title:

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Journal Country/Territory:

Language:

Publisher:

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Subject Categories:

: Impact Factor

? Hegoczki, J., Janzso, B. and Suhajda, A. (1995), Preparation of Titanium Enriched Saccharomyces-Cerevisiae. *Acta Alimentaria*, **24** (2), 181-190.

Abstract: Under adequate circumstances yeasts are capable of accumulating, and incorporating into organic compounds large amounts of trace elements. Use of nutrient medium supplemented with 20 μg cm-3 Ti-ascorbate resulted in a titanium-accumulation in the range of 1500-2000 μg g-1 dried yeast. With the addition of Ti-ascorbate to the yeast culture in the exponential phase of growth high Ti-binding to the cell components can be attained, instead of adsorption on the surface.

Keywords: Accumulation, Adsorption, Titanium, Trace Elements, Yeast

? Gvozdenovic, J. and Curakovic, M. (1995), The influence of packaging and storage time on the colour of dehydrated raspberry. *Acta Alimentaria*, **24** (3), 257-268.

Abstract: The influence of six plastic combined packaging materials, packing conditions and storage time on the intensity change of colouring matters in dehydrated raspberry was investigated. Dehydrated raspberry was packed under atmospheric pressure, in vacuum and under nitrogen. A glass ampulla airtightly sealed after filling with raspberry powder was used as a control. The colour investigation of the packed product was performed immediately after packing and then after 1, 3, 6, 9 and 12 months of storage in two experimental replications. The colour changes were determined as the sum of adsorption values for colouring matters at 520 and 440 nm. In order to reach the stable conditions and to avoid the influence of pH value on anthocyanins during storage, the measurement of the total spectrum was carried out at pH 1 and pH 4.5. The results showed the gradual increase of adsorption values at 440 nm during storage, depending on type of packaging material and on conditions of packaging.

Keywords: Adsorption, Colour Changing, Packaging Materials, Raspberry Powder, Water Activity

? Ozboy, O., Sahbaz, F. and Koksel, H. (1998), Chemical and physical characterisation of sugar beet fiber. *Acta Alimentaria*, **27** (2), 137-148.

Abstract: Sugar beet fiber used in this study was analyzed for protein, ash, nitrogen, sucrose, acid and neutral detergent fiber, hemicellulose, cellulose, lignin, direct and bulk densities, cation exchange and water holding capacities. Moisture sorption isotherms of fine and coarse sugar beet fibers were determined at 25°C by the static gravimetric method. BET, Freundlich, Oswin and GAB equations were applied to fit the experimental moisture sorption data for the sugar beet fibers. The parameters of each equation were determined and presented. Goodness of fit (from regression coefficient) indicated that GAB and Oswin equations were the best fitting ones for the sorption data over the a(w) range of 0.07 and 0.78.

Keywords: Binding, Capacity, Dietary Fiber, Dietary Fiber, GAB, Inverse Gas-Chromatography, Isotherms, Moisture Sorption Characteristics, Moisture Sorption Isotherm, Sugar Beet Fiber, Water Sorption

? Gaudreau, H., Tompkins, T.A. and Champagne, C.P. (2001), The distribution of iron in iron-enriched cells of Saccharomyces cerevisiae. *Acta Alimentaria*, **30** (4), 355-361.

Abstract: Fresh or freeze-dried iron-enriched bakers’ yeast (5% of total solids composed of iron) were fractionated, and the distribution of iron was examined. After centrifugation of fresh yeast creams, 89% of total iron was found in the supernatant, which contained only 23% of the total solids. Results suggest that only 13% of the iron is bound to cells in the fresh yeast suspension. Most of the cell-located iron was found on the cell wall, whereas the cytoplasm contained proportionally (iron content of total solids) almost 3 times less iron than the cell walls. Freeze-drying of the iron-enriched yeast had marked effects on the distribution of total solids and iron (in the fractionation procedures that were carried out following their rehydration). The freeze-drying process induced binding of free iron to the yeast cell wall, and twice as much iron was thus found on freeze-dried cells. In the freeze-dried product, it was estimated that 27% of iron was bound to cell fractions.

Keywords: Adsorption, Drying, Metals, Minerals, Release, Yeast, Yeast

? Šereš, Z., Gyura, J., Eszterle, M. and Vatai, G. (2004), Coloured matter removal from sugar-beet industry syrup by ultra- and nanofiltration. *Acta Alimentaria*, **33** (2), 119-127.

Abstract: file produced sugar, as the Final product in sugar production technology, has to contain as low non-Sucrose compounds with coloured matters as possible. Ultrafiltration and nanofiltration Could be one of the Solutions for a more effective separation of non-sucrose compounds from intermediate products from which sucrose directly crystallises. The separation of non-sucrose compounds by ultra- and nanofiltration is investigated oil syrup Solution with 40% d.m. content, which is all intermediate product in the phase of sucrose crystallisation. Further, this paper investigates variables in the Ultrafiltration and nanofiltration of syrup solutions, such as variations in pore sizes of the polymer membranes, syrup temperatures, syrup flow rates and transmembrane pressures. During ultrafiltration, under the investigated conditions; permeate flux is about 10 times less than water flux (150 l m-2h-1) on the first membrane and 8 times less than water flux (285 l m-2h-1) on the second membrane, while the nanofiltration permeate flux is 15 times less than water flux (320 l m-2h-1). The permeate flux decreases due to the adsorption of non-sucrose compounds by the filter membranes and the resultant increase in resistance to mass transfer. The colour content is about 58% lower by ultrafiltration using membranes. There is no great difference in colour separation between the used ultrafiltration membranes with different pore sizes. Nanofiltration was shown to separate 76% of coloured matter from syrup. In all the examined cases, permeate turbidity could be reduced by 75-80%, according to feed.

Keywords: Coloured Matter, Nanofiltration, Sugar Syrup, Ultrafiltration

# Title: Acta Anaesthesiologica Scandinavica

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? Gisvold, S.E. (1995), What is happening to the quality of research - and how can quality be measured. *Acta Anaesthesiologica Scandinavica*, **39** (1), 1-2.

Full Text: 1995\Act Ana Sca39, 1.pdf

Keywords: Bibliometric Indicators, Ethics, Research, Research Quality

? Nishina, K., Asano, M., Mikawa, K., Maekawa, N. and Obara, H. (1995), The accuracy of reference lists in *Acta Anaesthesiologica Scandinavica*. *Acta Anaesthesiologica Scandinavica*, **39** (5), 577-578.

Full Text: 1995\Act Ana Sca39, 577.pdf

Abstract: To determine the accuracy of bibliographic citation in Acta Anaesthesiologica Scandinavica, we reviewed all 1990 volumes and part of 1994 volumes of the journal and sequentially numbered all references appearing in those years (n = 2701 and 2158 in 1990 (No. 1-No. 8) and 1994 (No. 1-No. 5), respectively). We randomly selected 100 references from each year. After citations of nonjournal articles were excluded. The remaining 195 citations were carefully scrutinized. Authors’ names, article title, journal title, volume number, page numbers, and year were examined in each selected reference. A reference was deemed correct if each element of the citation was identical to its source. of the examined references. 40% and 45% contained one or more errors in 1990 and 1994, respectively. The elements most likely to be inaccurate were, in descending order of frequency article title, author, and page number. No significant differences existed in the error rate between the two years. We have found many citation errors in the reference lists of Acta Anaesthesiologica Scandinavica and no improvement in these latest four years. All contributors to Acta Anaesthesiologica Scandinavica should thoroughly check the accuracy of reference lists.

Keywords: Accuracy, Citation, Citation Errors, Citations, Documentation,Acta Anaesthesiologica Scandinavica, Error, Error Rate, Errors, Improvement, Journal, Reference, References, Source, Volume

Gisvold, S.E. (1999), Citation analysis and journal impact factors - is the tail wagging the dog? *Acta Anaesthesiologica Scandinavica*, **43** (10), 971-973.

Full Text: [1999\Act Ana Sca43, 971.pdf](1999/Act%20Ana%20Sca43,%20971.pdf)

? Boldt, J., Haisch, G. and Maleck, W.H. (2000), Changes in the impact factor of anesthesia/critical care journals within the past 10 years. *Acta Anaesthesiologica Scandinavica*, **44** (7), 842-849.

Full Text: [2000\Act Ana Sca44, 842.pdf](2000/Act%20Ana%20Sca44,%20842.pdf)

Abstract: Background: The impact factor (IF) is published by the Institute for Scientific Information (ISI). There is a tendency to assess quality of scientific journals with the help of the IF. An analysis of the changes in the EF over time in the different specialities may help to further enlighten the worth and problems of the IF Methods: The IFs listed under the subheadings Anesthesiology and Emergency Medicine & Critical Care in the Science Citation Index - Journal Citation Report were descriptively analysed over the past 10 years. Additionally, IFs of some other important journals (subheadings Surgery, Cardiovascular, General Medicine) were analysed. Results: The IF of most of the journals showed a constant increase over the years (average in Anesthesiology: +65%; average in Emergency Medicine gr Critical Care: +145%). IFs of the highest ranked journals of other specialities showed a similar increase over the years (average in surgical journals: +56%; average in cardiac journals: +59%; average in general journals: +40%). More Anesthesiology and Emergency Medicine & Critical Care journals originated from the USA show an IF >2.0 over the past 10 years than do European journals. Conclusion: Although the value of the IF is highly controversial, it is a frequently used tool to assess rating of a medical journal. Anesthesiology and Emergency Medicine & Critical Care journals showed a continuous increase in the IF over the past 10 years.

Keywords: Analysis, Care, Changes, General, Impact, Impact Factor, Institute for Scientific Information, ISI, Journal, Journals, Medical, Quality, Quality of, Science Citation Index, Scientific Journals, Specialities, USA, Value

? Boldt, J., Maleck, W.H. and Fent, T. (2001), Price development in important anesthesia and critical care medicine journals in comparison to journals of other disciplines. *Acta Anaesthesiologica Scandinavica*, **45** (4), 458-464.

Full Text: [2001\Act Ana Sca45, 458.pdf](2001/Act%20Ana%20Sca45,%20458.pdf)

Abstract: Background: in today’s climate of financial restrictions, Libraries and individual subscribers complain about the price increase of scientific journals. The development in prices of anesthesia/ critical care journals was analysed over the past 6 years and compared to prices of some journals of other disciplines. Methods: Important journals in the categories Anesthesiology, Emergency Medicine & Critical Care, Surgery, Medicine (General), and Cardiac & Cardiovascular Systems listed in the 1999 Science Citation Index of Journal Citation Report were included and prices for the years 1995 to 2000 were analysed. Results: Increase in prices ranged from +13% to +199%. The mean increase in journal prices was lowest in the category Anesthesiology (+61%), higher in the category Critical Cave (+73%), and highest in the category Medicine, General (+101%). Changes in the impact factor (IF) varied widely, ranging from a decrease (Lancet: -43%; J Neurosurg Anesth: -44%) to a tremendous increase (e.g. Reg Anesth +165%; Ann Emerg Med +149%). The journals’ size (number of articles or pages) did not increase proportionally with the increase in prices. Conclusion: A disproportionate rise in journal prices was seen over the past 6 years. The large increase in cost may have multiple reasons. The rapidly increasing cost of research journals may affect research quality because economic pressure may result in reduction in availibility of information due to cancellation of subscriptions to journals.

Keywords: Anesthesia, Articles, Citation, Comparison, Costs, Critical Care, Critical Care Medicine, Development, Economic, General Medicine, IF, Impact, Impact Factor, Journal, Journals, Libraries, Medicine, Price, Prices, Reduction, Research, Research Journals, Research Quality, Science, Science Citation Index, Scientific Journals, Surgery

Fassoulaki, A., Papilas, K., Paraskeva, A. and Patris, K. (2002), Impact factor bias and proposed adjustments for its determination. *Acta Anaesthesiologica Scandinavica*, **46** (7), 902-905.

Full Text: [2002\Act Ana Sca46, 902.pdf](2002/Act%20Ana%20Sca46,%20902.pdf)

Abstract: Background: The impact factor (IF), a qualitative parameter used to evaluate scientific journals, has several flaws. The aim of the study was to evaluate two of its important constraints, journal self-citation and scientific field, and to investigate the potential for improvement. Methods: We studied the five or six highest impact journals from each of seven medical fields: anesthesiology, dermatology, genetics and heredity, immunology, general and internal medicine, ophthalmology and surgery. To correct for journal self-citation, we divided the number of 1998 citations of papers published in 1996 and 1997, minus the self-citations, by the number of papers published in the same period. For inter-field normalization we divided the IF by the mean of the IFs of the upper quartile for the same category of medical field (IF/f(cat)). Results: For the 36 journals, there was a negative correlation between IF and self-cited and self-citing rates (r (s) = -0.765, P < 0.001 and r (s) = -0.479, P < 0.003, respectively). Self-cited rate is the ratio of a journal’s self-citations to the number of times it is cited by all journals including itself. Self-citing rate relates a journal’s self-citations to the total references it makes. The IF/f(cat) for the 36 journals are positively correlated with their conventional IF (r (s) = 0.91, P < 0.001). Conclusion: Correcting the IF of the 36 journals for self-citation did not significantly change journal rankings. The adjusted IF/f(cat) to normalize for the scientific field was positively correlated with the conventional IF.

Keywords: Anesthesia-Journals, Correction Factors, Impact Factor, Medical Journals, Scientific Field

Figueredo, E., Perales, G.S. and Blanco, F.M. (2003), International publishing in anaesthesia - how do different countries contribute? *Acta Anaesthesiologica Scandinavica*, **47** (4), 378-382.

Full Text: [2003\Act Ana Sca47, 378.pdf](2003/Act%20Ana%20Sca47,%20378.pdf)

Abstract: Background: The evaluation of the international distribution in biomedicine research is a subject that creates expectations. This study assesses the recent evolution of world-wide distribution of research in the anaesthesiology field and discusses some of the possible factors which could give rise to changes in the interpretation of absolute results.

Methods: A search on Medline was run to obtain the source country of the journal articles (with abstract) from 10 important anaesthesia journals in the 1997-2001 period. The data were analysed and standardized to journal impact factor values of each publication and population size. Annual evolution in the number of publications in the countries with the largest scientific production was analysed. Furthermore, the distribution of articles by country of origin was studied for each journal.

Results: The 9724 publications came from 65 countries. In absolute numbers, the USA leads research in anaesthesiology (24.4%). The evaluation of the contribution of the more productive countries revealed a progressive increase in the German contribution (from 5.1% to 9.4%) and a decrease in the American contribution (from 28.6% to 21.8%) over the 5 years analysed. In relative terms, Finland, Sweden and Denmark were the most productive countries per million inhabitants (8.8, 7.2 and 6 publications/year, respectively).

Conclusion: The geographic distribution of the publications on anaesthesiology must not only be analysed in absolute numbers, where the USA is the most productive. The North-European countries show the largest production/number of inhabitants ratio; whereas the largest percentage increase during the period is found in Germany.

Keywords: Anesthesia, Journals, Information Science, Publications, Manuscripts, Biomedical Publications, Anesthesia-Journals, Impact Factors, Care Journals, Geography, US

Terajima, K. and Åneman, A. (2003), Citation classics in anaesthesia and pain journals: A literature review in the era of the internet. *Acta Anaesthesiologica Scandinavica*, **47** (6), 655-663.

Full Text: [2003\Act Ana Sca47, 655.pdf](2003/Act%20Ana%20Sca47,%20655.pdf)

Abstract: Background: The number of citations an article receives reflects its scientific impact. The introduction of internet-based resources to search and access articles has made it possible to review even whole scientific areas. This study identifies the top 50 most-cited articles over the last 25 years in speciality journals dedicated to anaesthesia and pain, respectively.

Methods: Twenty-two journals listed in The Science Citation Index ExpandedTM in the field of anaesthesiology and nine major medical journals were screened using the cited reference option to identify articles cited more than 100 times between 1986 and 2002. The top 50 articles in speciality journals and the top 10 articles in major medical journals concerning anaesthesia and pain were retrieved for further analysis.

Results: The most-cited articles in speciality journals were published from 1986 to 1997 and received a mean of 222 (anaesthesia) and 279 (pain) citations. Sixty-seven institutions produced the most-cited articles and of those 28 were located outside North America. The articles were published in six journals led by the *Journal of Pain* (50 articles) and *Journal of Anaesthesiology* (39 articles). Forty-seven articles were classified as related to clinical experience, 33 were review articles, and 20 discussed basic science.

Conclusion: To make an article a possible ‘citation classic’ in anaesthesiology, it should be published in one of six leading journals and originate from an established institute in North America. Internet resources to publish and cite the literature have to date not advanced any article published in the last 5 years to the top 100 list.

Keywords: Access, Anaesthesia, Anaesthesiology, Bibliometrics, Citation, Citation Index, Citations, Closed Claims Analysis, D-Aspartic Acid, Dorsal Horn, Epidural-Anesthesia, Formalin Test, Impact, Inhaled Nitric-Oxide, Journals, Literature, Literature Review, Medical, Medical Journals, NMDA-Receptor Antagonist, Pain, Postoperative Pain, Publications, Respiratory-Distress-Syndrome, Sciatic-Nerve Injury, Science, Science Citation Index

Skram, U., Larsen, B., Ingwersen, P. and Viby-Mogensen, J. (2004), Scandinavian research in anaesthesiology 1981-2000: Visibility and impact in EU and world context. *Acta Anaesthesiologica Scandinavica*, **48** (8), 1006-1013.

Full Text: [2004\Act Ana Sca48, 1006.pdf](2004/Act%20Ana%20Sca48,%201006.pdf)

Abstract: Background: We wished to assess the development in number and impact of publications in anaesthesiology and intensive care medicine from 1981 to 2000 in the four Scandinavian countries: Sweden, Norway, Finland, and Denmark. For comparison, we also analyzed data from the UK and the Netherlands.

Methods: Publication and citation data from 1981 to 2000 were gathered from National Science Indicators (2001), covering 33 journals indexed in Current Contents. Data were analyzed in running 5-year periods. The following informetric indicators were used: absolute number of publications; absolute number of citations; absolute citation impact (average number of citations per publication per 5-year period); citation impact relative to the European Union and the world; and the percentage of cited papers from each country.

Results: The annual number of publications from Denmark was stable over the 20-year period. Sweden increased its production by 35%, while the remaining four countries showed increases from 100% to 146%. Thus, Sweden and Denmark lost visibility within the European Union (EU) and in world context. The EU and world citation shares of Finland and Norway increased slightly, whereas those of Sweden, Denmark, the UK, and the Netherlands all declined significantly. The absolute citation impact (ACI) increased for all the four Scandinavian countries. The ACI of the Netherlands did not change and was surpassed by all the Scandinavian countries by 1994-98, while the UK finished below the other five countries.

Conclusions: (1) The annual number of publications from Sweden, Norway, Finland, the UK, and the Netherlands increased after the late eighties, whereas the net publication output from Denmark was stagnant over the 20-year period investigated; (2) the international publication and citation visibility of Finland and Norway increased slightly, as opposed to the significant decrease seen by the other four countries; (3) judging from the increase in absolute and relative citation impact and in the percentage of cited papers, the recognition of publications from the four Scandinavian countries increased over the past 20 years.

Keywords: Anaesthesiology, Anesthesiology, Standards, Anesthesiology, Statistics and Numerical Data, Anesthesiology, Trends, Bibliometrics, Citation, Citation Analysis, Citation Impact, Citations, Countries, Departments, Development, European Union, Impact, Indicators, Journals, Papers, Publication, Publications, Publishing, Standards, Publishing, Statistics and Numerical Data, Publishing, Trends, Research, Research, Standards, Research, Statistics and Numerical Data, Research, Trends, Science, Scientific Publications, Visibility

? Pagel, P.S. and Hudetz, J.A. (2011), H-index is a sensitive indicator of academic activity in highly productive anaesthesiologists: Results of a bibliometric analysis. *Acta Anaesthesiologica Scandinavica*, **55** (9), 1085-1089.

Full Text: [2011\Act Ana Sca55, 1085.pdf](2011/Act%20Ana%20Sca55,%201085.pdf)

Abstract: Background: H-index distinguishes differences in scholarly output across faculty ranks in anaesthesiologists, but whether h-index also identifies differences in other aspects of productivity is unknown. We tested the hypothesis that h-index is an indicator of not only publication record, but also grant funding and mentoring in highly productive US academic anaesthesiologists. Methods: We conducted an internet analysis of the Foundation for Anesthesia Education and Research Academy of Research Mentors in Anesthesiology (n = 43). Publications, citations, citations per publication, and h-index for each investigator were obtained using the Scopus (R). Total grants, active grants, years of funding, and duration of longest funded grant were recorded using the US National Institutes of Health Research Portfolio Online Reporting Tools (R). Members were surveyed to identify the number of their career trainees and those who obtained independent funding. Results: The median [IRQ (Interquartile range)] h-index of members was 23 [17-32 (8-50)]. Members published 136 [100-225 (39-461)] papers with 3573 [1832-5090 (150-11,601)] citations and 21 [15-32 (4-59)] citations per publication. Members received four [3-7 (0-10)] grants and were funded for 29 [17-45 (0-115)] grant-years. Survey respondents (79%) mentored 40 [26-69 (15-191)] trainees, three [2-6 (0-20)] of which subsequently received funding. Members with h-indices greater than the median had more publications, citations, citations per publication, grants, and years of funding compared with their counterparts. H-index was associated with total citations, active grants, and the number of trainees. Conclusions: In addition to publication record, h-index sensitively indicates grant funding and mentoring in highly productive US academic anaesthesiologists.

Keywords: Analysis, Anesthesia, Bibliometric, Bibliometric Analysis, Citation Analysis, Citations, Differences, Education, Faculty, Funding, h Index, h-Index, h-Indices, Health, Journal Impact Factors, Medicine, Methods, Papers, Productivity, Publication, Publications, Research, Scopus, US

# Title: Acta Anatomica Sinica

Full Journal Title: [Acta Anatomica Sinica](http://scholar.ilib.cn/P-jpxb.html)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0529-1356

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zhou, P. and Tang, M. (2008), A bibliometric analysis of the research on anterolateral thigh flap. *Acta Anatomica Sinica*, **39** (2), 264-266.

Full Text: [2008\Act Ana Sin39, 264.pdf](2008/Act%20Ana%20Sin39,%20264.pdf)

Abstract: Objective To understand the status and developmental trends of the research on anterolateral thigh flap. Methods The PubMed search was downloaded and the results were imported into the EndNote database, then the distribution was analysed by age, nation, language, periodical and frequency. Results There were 236 articles on anterolateral thigh flap in PubMed from 1996 to August 2006. The amount of articles multiply increased from 2002 to August 2006, at eighty percent of all. They were published in 8 languages, in 47 journals and from 9 countries. China and the USA are the major countries of the publication, with 77 articles each, which altogether took up 65.2% of the total. Words of a high frequency are as follows: free skip flap, island skin flap, ultrathin skin flap, perforating artery, and descending branch of lateral circumflex femoral artery, the frequency ratio of which is up to 97.46%. Conclusion The papers on anterolateral thigh flap are written mainly by China and USA; English is the main publishing language; The articles are chiefly published by Plast Reconstr Surg and other 8 journals. The research emphases of the anterolateral thigh flap are on free skip flap, perforating flap, ultrathin skin flap, and island flap. Angiography and 3D-reconstruction are the recent techniques for the research.

Keywords: Age, Analysis, Artery, Bibliometric, Bibliometric Analysis, China, Database, Distribution, Journals, Languages, Papers, Periodical, Publication, Publishing, Pubmed, Research, Skin, Techniques, Trends, USA

# Title: Acta Arachnologica Sinica

Full Journal Title: [Acta Arachnologica Sinica](http://e29.cnki.net/KNS50/Navi/item.aspx?NaviID=1&BaseID=ZXXB&NaviLink=%e8%9b%9b%e5%bd%a2%e5%ad%a6%e6%8a%a5)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1005-9628

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Yang, Z.Q., Fan, H.L. and Liu, Y.R. (2003), Bibliometric analysis of scientific papers of “*Acta Arachnologica Sinica*” from 1992 to 2001. *Acta Arachnologica Sinica*, **12** (2), 122-124.

Full Text: [2003\Act Ara Sin12, 122.pdf](2003/Act%20Ara%20Sin12,%20122.pdf)

Abstract: The scientific papers in “Acta A rachno logica Sinica” from l992 to 2001 have been analysed by bibliometrics, including the characteristics of the periodical, it sauthor’s areas, units distribution and quotations. Some suggest ions have been put forward to promote the Acta Arachnologica Sinica.

Keywords: Acta Arachnologica Sinica, Bibliometric Analysis, Periodical Review

# Title: Acta Biochimica et Biophysica Sinica

Full Journal Title: [Acta Biochimica et Bio physica Sinica](http://e42.cnki.net/KNS50/Navi/item.aspx?NaviID=1&BaseID=SHWL&NaviLink=%e7%94%9f%e7%89%a9%e5%8c%96%e5%ad%a6%e4%b8%8e%e7%94%9f%e7%89%a9%e7%89%a9%e7%90%86%e5%ad%a6%e6%8a%a5)

ISO Abbreviated Title: Acta Biochim. Biophys. Sin.

JCR Abbreviated Title: Acta Bioch Bioph Sin

ISSN: 0582-9879

Issues/Year: 6

Journal Country/Territory: Peoples R China

Language: English

Publisher: Shanghai Inst Biochemistry, Academia Sinica

Publisher Address: 320 Yue-Yang Road, Shanghai 20031, Peoples R China

Subject Categories:

Biochemistry & Molecular Biology: Impact Factor 0.289, 292/310 (2000)

Biophysics: Impact Factor 0.289, 63/66 (2000)

? Fu, Y.Z. and Yang, J.W. (2000), An ESR study on the effect of hydration on the dynamic property of RNase A. *Acta Biochimica et Biophysica Sinica*, **32** (1), 39-42.

Full Text: [2000\Act Bio Bio Sin32, 39.pdf](2000/Act%20Bio%20Bio%20Sin32,%2039.pdf)

Abstract: A method is described for the measurement of dynamic property of RNase A by ESR under xeric conditions. The relationship between relative humidity and hydration degree of RNase A was determined by hydration isotherm. A solution of RNase A was allowed to react with a solution containing maleimide nitroxide label at 25°C, then was dialysed and lyophilized. The stable powder of RNase A-maleimide nitroxide label compound was put into the tubules, then was hydrated under different relative humidity for 11 days. After hydration, the tubules were closed and measured by ESR. The relationship between hydration value and A(max) was detected. The results showed that the lowest water content that could induce motion of RNase A by water is about 0.20 g of water per g of RNase A. That means the motion of RNase A molecule becomes detectable when there are 152 water molecules around one RNase A molecule.

Keywords: Hydration, RNASE A, ESR, Protein

# Title: Acta Bioethica

Full Journal Title: [Acta Bioethica](http://www.actabioethica.cl/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Stepke, F.L. (2010), *Acta Bioethica*: A decade of history. *Acta Bioethica*, **16** (2), 115-118.

Full Text: 2010\Act Bio16, 115.pdf

Abstract: A historical account of origin and evolution of Acta Bioethica (ISSN 0717-5906) is presented, emphasizing the topics addressed and the geographical origin of its authors during its first ten years of existence. Indexed in SciELO, Science Citation Index, Latindex and other bibliographic databases, the journal has become standard reference for scholars. Its papers, in English, Spanish and Portuguese, are cited with increasingly higher frequency. The Centro Interdisciplinario de Estudios en Bioetica (CIEB), at the University of Chile, which edited it during the time of the consortium with The PAHO/WHO Bioethics Program, continues increasing its presence in specialized circles.

Keywords: Acta Bioethica, Authors, Bibliographic Databases, Bioethics History, Bioethics Publication, Chile, Citation, Databases, Evolution, First, History, Journal, Origin, Papers, Reference, SCIELO, Science, Science Citation Index, Standard, University

# Title: Acta Biologica Academiae Scientiarum Hungaricae

Full Journal Title: Acta Biologica Academiae Scientiarum Hungaricae

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Muller, M., Toro, I. and Tóth, J. (1962), Studies on feeding and digestion in protozoa. 4. Acid phosphatase and nonspecific esterase activity of food vacuoles in amoeba proteus. *Acta Biologica Academiae Scientiarum Hungaricae*, **13** (1), 105-??.

# Title: Acta Biologica et Medica Germanica

Full Journal Title: Acta Biologica et Medica Germanica

ISO Abbreviated Title:

JCR Abbreviated Title: Acta Biol Med Ger

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Schopp, W., Thyfronitou, J. and Aurich, H. (1976), Kinetic-properties of enzymes, in particular of yeast alcohol- dehydrogenase, following their adsorption to polyaminomethylstyrene. *Acta Biologica et Medica Germanica*, **35** (11), 1443-1453.

? Hoppe, H. and Cumme, G.A. (1978), Methods for estimating the Michaelis-Menten parameters Km and Vm together with their standard deviations - comparison by evaluating simulated velocity data. *Acta Biologica et Medica Germanica*, **37** (8), 1177-1184.

# Title: Acta Biotechnologica

Full Journal Title: [Acta Biotechnologica](http://www3.interscience.wiley.com/cgi-bin/jhome/107561436); [Acta Biotechnologica](http://www3.interscience.wiley.com/cgi-bin/jtoc?ID=60500214)

ISO Abbreviated Title: Acta Biotechnol.

JCR Abbreviated Title: Acta Biotechnol

ISSN: 0138-4988

Issues/Year: 4

Journal Country/Territory: Germany

Language: Multi-Language

Publisher: Wiley-V C H Verlag GmbH

Publisher Address: Muhlenstrasse 33-34, D-13187 Berlin, Germany

Subject Categories:

Biotechnology & Applied Microbiology: Impact Factor 0.569, 86/124 (1999)

? Glombitza, F. and Iske, U. (1987), Bioaccumulation and biosorption for detoxification and removal of metals. *Acta Biotechnologica*, **7** (4), 331-336.

Full Text: [1987\Act Bio7, 331.pdf](1987/Act%20Bio7,%20331.pdf)

Abstract: Growing and resting cells of microorganisms are able to accumulate metal ions. These reactions are based on a storage within the cells as well as sorption at the cell wall. The intracellular storage takes place preferably by growing cells. The stored amounts of metals by resting cells depend on the concentration of metal ions in the aqueous phase, the pH-value, and, in some cases on the temperature. Maximum concentrations for some metals and strains of microorganisms are given. The representation of the uptake reaction as an adsorption process using a Freundlich-Isotherm demonstrates straight lines with different clopes. The removal of the metals from the biomass by a desorption reaction is possible in some cases, other possibilities are a reducing process or the formation of an ash of the biomss containing compounds of metals. These reactions may be used simultaneously for detoxification and removal of metals from waste water.

Holló, J. and Czakó, L. (1987), Nitrate removal from drinking-water in a fluidized-bed biological denitrification bioreactor. *Acta Biotechnologica*, **7** (5), 417-423.

Full Text: [1987\Act Bio7, 417.pdf](1987/Act%20Bio7,%20417.pdf)

Abstract: In most industrially developed countries an increasing degree of nitrification can be observed in potential water reservoirs. High nitrate content is unacceptable by public health standards. Since contamination seems to be unavoidable, the only realistic solution is purification prior to utilization. One of the potential variations is biological denitrification with a highly intensive facility, a fluidized- or expanded-bed bioreactor. Based on laboratory and pilot plant experiments, a detailed analysis is presented on the problems arising and solutions offered in the construction of a purification system meeting high quality requirements of drinking water purification. The crucial point is selection of the denitrifying microorganisms and organic matter required for denitrification, which simultaneously determines the attachment of bacteria to the support material (autoimmobilization), the intensity of nitrate removal and the character of post-purification.

Cihangir, N. and Saglam, N. (1999), Removal of cadmium by *Pleurotus sajor-caju* basidiomycetes. *Acta Biotechnologica*, **19** (2), 171-177.

Full Text: [1999\Act Bio19, 171.pdf](1999/Act%20Bio19,%20171.pdf)

Abstract: The bioaccumulation of cadmium by the white rot fungus Pleurotus sajor-caju onto dry biomass was investigated using aqueous media with concentrations in the range of 0.125 mM-1.0 mM The highest cadmium uptake (between 88.9 and 91.8%) was observed with aerobic fungal biomass from the exponential growth phase. Up to 1.0 mM cadmium gradually inhibited mycelium development, but never blocked it completely. Freeze-dried, oven-dried and non-metabolizing live Pleurotus sajor-caju biomass types were tested for their capacity to adsorb the test ion Cd2+ within the pH range of 4.5 to 6.0. Freeze-dried biomass proved to be the most efficient biomass type for Cd2+ metal adsorption. Therefore, Pleurotus sajor-caju may be used for heavy metal removal and bioremediation.

Keywords: *Rhizopus-Arrhizus* Biomass, *Saccharomyces-Cerevisiae*, Metal Accumulation, Waste-Water, Biosorption, Fungi, Ions

Chu, K.H. and Hashim, M.A. (2001), Desorption of copper from polyvinyl alcohol-immobilized seaweed biomass. *Acta Biotechnologica*, **21** (4), 295-306.

Full Text: [A\Act Bio21, 295.pdf](A/Act%20Bio21,%20295.pdf)

Abstract: The desorption characteristics of copper on biomass of a marine macroalga, *Sargassum baccularia*, immobilized in polyvinyl alcohol (PVA) gel beads, were investigated using HCl eluting solutions. Both the extent and the rate of desorption were affected by the pH of the eluent. Nearly 91% of the copper initially adsorbed was released back into an HCl solution at pH 1.0 after 40 min of contact time when apparent desorption equilibrium was achieved. When the pH was raised to 2.0, about 81% of the bound copper was desorbed within 120 min of contact time. Apparent desorption rate constants were determined using first-order desorption models. Very high concentrations of copper in the eluate could be obtained by using small amounts of the HCl eluent. However, this was achieved at the expense of the desorption efficiency. The PVA-immobilized seaweed biomass beads could be regenerated with HCl solution at pH 1.0 or 2.0 in multiple cycles of copper biosorption-desorption. Following desorption at pH 1.0 in the first cycle, about 55% of the biosorption capacity of the virgin biomass could be reused in subsequent cycles; in the case of desorption at pH 2.0, about 67% of the original uptake capacity was reusable.

Keywords: Algal Biomass, Heavy-Metals, Biosorption, Cadmium, Uranium, Removal, Model, Lead, Zinc

# Title: Acta Botanica Brasilica

Full Journal Title: [Acta Botanica Brasilica](http://www.scielo.br/scielo.php/script_sci_serial/lng_pt/pid_0102-3306/nrm_iso)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0102-3306

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Scarano, F.R., De Toni, K. and Amarante, C.V.G. (2009), A profile of the impact of *Acta Botanica Brasilica*: Reflections on how to improve visibility and recognition of a scientific journal. *Acta Botanica Brasilica*, **23** (2), 606-611.

Full Text: [2009\Act Bot Bra23, 606.pdf](2009/Act%20Bot%20Bra23,%20606.pdf)

Abstract: We have estimated the ISI-impact factor of Acta Botanica Brasilica for the past six years, calculated the journal’s h-index., calculated the journal’s self-citation, examined country and institutions of origin of the papers that cite Acto papers, and examined scope and profile of the most-cited papers published by the journal. Results demonstrated a steep rise in impact factor and citation frequency in 2008, which is most encouraging. but also revealed that the journal is below the level of maturity expected of a 20-year old journal. Visibility of the journal is mostly national although, surprisingly, journal’s self-citation of 12% is fairly low. We use Acta as an example to discuss possible strategies to enhance the international visibility of botanical journals that are newcomers to ISI.

Keywords: h-Index, Impact Factor, Science, Scientometrics, Self-Citation, Successive h-Indexes

# Title: Acta Botanica Croatica

Full Journal Title: [Acta Botanica Croatica](http://hirc.botanic.hr/actabot/actahome.htm)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Jokic, M. and Sirotic, G. (2002), The communicability of the journal *Acta Botanica Croatica* over the 1991-2000 period. *Acta Botanica Croatica*, **61** (2), 221-230.

Full Text: [2002\Act Bot Cro61, 221.pdf](2002/Act%20Bot%20Cro61,%20221.pdf)

Abstract: The papers published in the journal Acta botanica croatica in the period from 1991 to 2000 are analysed from a scientometric point of view. The purpose of this article is to determine the communicability of this journal through parameters such as the extent to which institutions and countries are represented in the authors of the papers, the number of citations per year measured in the SCI (Web of Science), the age of the literature quoted in terms of years, the distribution of and list of journals that cite Acta botanica croatica, and the geographical origin of the journals that cite it. Acta botanica croatica is read and available in 24 countries, it has been cited by 101 journals covered in the SCI; since 1998 original scientific papers have been written in English, and the potential accessibility of the journal has been increased. In 2000 the percentage of foreign authors publishing in the journal rose to 57%.

# Title: Acta Botanica Gallica

Full Journal Title: [Acta Botanica Gallica](http://www.benran.ru/Magazin/El/A/U43928.HTM)

ISO Abbreviated Title: Acta Bot. Gall.

JCR Abbreviated Title: Acta Bot Gallica

ISSN: 1253-8078

Issues/Year: 4

Journal Country/Territory: France

Language: English

Publisher: Soc Botanique France

Publisher Address: Faculte de Pharmacie, BP 83, F-59006 Lille-Cedex, France

Subject Categories:

Plant Sciences: Impact Factor 0.375, 106/137 (2000)

? Prugnolle, F., Rousteau, A. and Belin-Depoux, M. (2000), Spatial occupation of Cyathea muricata Willd. (Cyatheaceae) in Guadeloupean tropical rain forest. I-At the individual level. *Acta Botanica Gallica*, **147** (4), 361-374.

Abstract: A study of the spatial occupation of Cyathea muricata Willd. has been made in Guadeloupe at 300 m altitude in the tropical rain forest. We have considered the occupied space at the level of the individuel during the growth. Thanks to the measure of the height, stipe diameter. length and number of fronds for some seventy tree-ferns, we demonstrated that there were two phases in the growth of Cyathea muricata. During the first phase, or establishment one, the diameter of the stipe and the length of the fronds attain their maximum whereas the height of tree-fern increases just a little, Then, the occupied space during this phase corresponds to an inverted cone with 30 cm of height and a radius, at his base, equal as the maximum length of the fronds. During the second phase or adult phase, only the augmentation of the height is effective: the diameter of the stipe and the length of the fronds remain stables. Then, the occupied space corresponds to a cylinder whose radius is equal as the maximum length of the fronds.

Keywords: Tropical Rain Forest, Cyatheaceae, Growth, Development, Spatial Occupation Model, Tree-Fern, Neotropical Cyatheaceae, Vascular Anatomy, Demography, Pubescens, Growth, Fiji

# Title: Acta Botanica Sinica

[Journal of Integrative Plant Biology](http://e42.cnki.net/KNS50/Navi/item.aspx?NaviID=1&BaseID=ZWXB&NaviLink=%e6%a4%8d%e7%89%a9%e5%ad%a6%e6%8a%a5)

Full Journal Title: [Acta Botanica Sinica](http://www.chineseplantscience.com/Eaboutus.asp); [Acta Botanica Sinica](http://e42.cnki.net/KNS50/Navi/item.aspx?NaviID=1&BaseID=ZWXB&NaviLink=%e6%a4%8d%e7%89%a9%e5%ad%a6%e6%8a%a5)

ISO Abbreviated Title: Acta Bot. Sin.

JCR Abbreviated Title: Acta Bot Sin

ISSN: 0577-7496

Issues/Year: 12

Journal Country/Territory: Peoples R China

Language: English

Publisher: Science Press

Publisher Address: 16 Donghuangchenggen North St, Beijing 100717, Peoples R China

Subject Categories:

Biochemistry & Molecular Biology: Impact Factor 0.434, 281/310 (2000)

Plant Sciences: Impact Factor 0.434, 99/137 (2000)

? Sun, K.Q. and Deng, S.H. (1999), Discovery and significance of the genus *Caulopteris* from the Wuda area of Inner Mongolia. *Acta Botanica Sinica*, **41** (5), 484-486.

Full Text: [1999\Act Bot Sin41, 484.pdf](1999/Act%20Bot%20Sin41,%20484.pdf)

Abstract: Caulopteris wudaensis sp. nov. was collected from the Shawl Formation of the early Early Permian in the Wuda area of Inner Mongolia, China. The genus Caulopteris is considered as the impression fossils of the tree fern stems. Most of the species under the genus Caulopteris are mainly distributed in the Euramerican Province, where;ts they are very rare in the Cathaysian Province. The discovery of the new species will provide some important evidences for the geographical distribution, ecology and evolution of the genus Caulopteris.

Keywords: Early Early Permian, Shanxi Formation, Caulopteris Wudaensis

# Title: Acta Cardiologica

Full Journal Title: Acta Cardiologica

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hilderson, D., Van Deyk, K. and Moons, P. (2008), Empirical evidence on transfer and transition in congenital heart disease: A bibliometric study. *Acta Cardiologica*, **63** (1), 124

Keywords: Bibliometric, Bibliometric Study, Evidence

# Title: Acta Chemica Scandinavica

Full Journal Title: [Acta Chemica Scandinavica](http://actachemscand.dk/)

ISO Abbreviated Title: Acta Chem. Scand.

JCR Abbreviated Title: Acta Chem Scand

ISSN: 0904-213X

Issues/Year: 12

Journal Country/Territory: Denmark

Language: English

Publisher: Munksgaard Int Publ Ltd

Publisher Address: 35 Norre Sogade, PO Box 2148, DK-1016 Copenhagen, Denmark

Subject Categories:

Biochemistry & Molecular Biology: Impact Factor 0.972, 214/295 (1999); Impact Factor 0.776, 252/290 (2000)

Chemistry: Impact Factor 0.972, 41/121 (1999); Impact Factor 0.776, / (2000)

? Pikkarainen, J. and Kulonen, E. (1959), Adsorption of water vapour by tissue polysaccharide. *Acta Chemica Scandinavica*, **13** (10), 2124-2125.

Full Text: [-1959\Act Che Sca13, 2124.pdf](-1959/Act%20Che%20Sca13,%202124.pdf)

Adler, E. and Lundquist, K. (1963), Spectrochemical estimation of phenylcoumaran elements in lignin. *Acta Chemica Scandinavica*, **17** (1), 13-26.

Full Text: [1960-80\Act Che Sca17, 13-1.pdf](1960-80/Act%20Che%20Sca17,%2013-1.pdf); [1960-80\Act Che Sca17, 13.pdf](1960-80/Act%20Che%20Sca17,%2013.pdf)

Burkov, K.A., Lilic, L.S. and Sillen, L.G. (1965), Studies on the hydrolysis of metal ions 54. The nickel ion, Ni2+, in 3 M (Na)ClO4 Medium. *Acta Chemica Scandinavica*, **19**, 14-30.

Full Text: [1960-80\Act Che Sca19, 14.pdf](1960-80/Act%20Che%20Sca19,%2014.pdf)

Notes: highly cited

? Haug, A. and Smidsrod, O. (1970), Selectivity of some anionic polymers for divalent metal ions. *Acta Chemica Scandinavica*, **24** (3), 843-854.

Full Text: [1960-80\Act Che Sca24, 843.pdf](1960-80/Act%20Che%20Sca24,%20843.pdf)

? Spohr, E. (1995), Computer modeling of interfaces between aqueous and metallic phases. *Acta Chemica Scandinavica*, **49** (3), 189-202.

Full Text: [1995\Act Che Sca49, 189.pdf](1995/Act%20Che%20Sca49,%20189.pdf)

Abstract: The results of recent molecular dynamics simulations of pure water and aqueous solutions containing single ions in contact with metallic surfaces are reviewed. Water forms a densely packed, partially oriented layer of adsorbed molecules. The compact layer influences the adsorption of ions and atoms on the metal surface in the electrochemical environment. Free energies of adsorption have been calculated in order to investigate (i) specific adsorption of ions on metal surfaces in a series of calculations of fluoride, chloride and iodide adsorption near a model surface and (II) the thermodynamics of the charge-transfer reaction I---> I-0 + e(-) on Pt(100).

Keywords: Adsorption, Charged Electrodes, Halide-Ions, Liquid Water, Molecular-Dynamics Simulation, Polarizable Water, Surface, Water Platinum Interface

# Title: Acta Chimica Academiae Scientarium Hungaricae (Acta Chemica Hungarica)

Acta Chimica Academiae Scientarium Hungaricae

Acta Chim Hung

(Acta Chim. Hung.; Acta. Chim. Acand. Sci.)

Subseries of: Acta Chemica Academiae Scientiarum Hungarica (Acta Chim. Acad. Sci. Hung.)

Full Journal Title: Acta Chimica Academiae Scientarium Hungaricae

ISO Abbreviated Title:

JCR Abbreviated Title: Acta Chim Acad Sci Hung

ISSN: 0001-5407

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Akademiai Kiado, Budapest

Publisher Address:

Subject Categories:

: Impact Factor

Schay, G., Fejes, P. and Szathmáry, J. (1957), Studies on the adsorption of gas mixtures, I. statistical theory of physical adsorption of the Langmuir-type in multicomponent systems. *Acta Chemica Academiae Scientiarum Hungarica*, **12**, 299-307.

? Tetenyi, P., Babernic, L. and Kiraly, J. (1961), On kinetics of catalytic dehydrogenation of hydroaromatic compounds. 2. Investigations on hydrogen adsorption on nickel catalyst. *Acta Chemica Academiae Scientiarum Hungarica*, **29** (1), 35-??.

Notes: IIsotherm

? Tóth, J. (1962), Gas-(DAMPF-) adsorption an festen oberflächen inhomogener aktivität, I. *Acta Chimica Academiae Scientarium Hungaricae*, **30** (4), 415-430.

Full Text: [-1959\Act Chi Aca Sci Hun30, 415.pdf](-1959/Act%20Chi%20Aca%20Sci%20Hun30,%20415.pdf)

Keywords: Adsorption

? Tóth, J. (1962), Gas- (DAMPF-) adsorption an festen oberflachen inhomogener aktivitat. 2. *Acta Chimica Academiae Scientarium Hungaricae*, **31** (4), 393-??.

? Tóth, J. (1962), Gas-(DAMPF-) adsorption an festen oberflachen inhomogener aktivitat. 3. *Acta Chimica Academiae Scientarium Hungaricae*, **32** (1), 39-??.

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? Tóth, J. (1963), Gas-(DAMPF-) adsorption an festen oberflachen inhomogener aktivitat. 5. Monomolekulare adsorption von gasgemischen. *Acta Chimica Academiae Scientarium Hungaricae*, **38** (3), 233-??.

? Tóth, J. (1963), Gas- (dampf-) adsorption an festen oberflachen inhomgener aktivitat. 6. Monomolekulare adsorption von gasgemischen. *Acta Chimica Academiae Scientarium Hungaricae*, **39** (3), 331-??.

? Tetenyi, P., Holly, S. and Schachter, K. (1964), On kinetics of catalytic dehydrogenation of hydroaromatic compounds. 6. Investigation of adsorption of methylcyclohexane on nickel catalyst by kinetic method. *Acta Chemica Academiae Scientiarum Hungarica*, **40** (2), 145-??.

? Tóth, J. (1966), Uber die bestimmung der spezifischen oberflache von adsorbenzien. 1. (AUF grund der multimolekularen adsorption). *Acta Chimica Academiae Scientarium Hungaricae*, **48** (1), 27-??.

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Notes: IIsotherm

Tóth, J. (1971), State equations of the solid-gas interface layers. *Acta Chemica Academiae Scientiarum Hungarica*, **69** (3), 311-328.

Full Text: [A\Act Che Aca Sci Hun69, 311.pdf](A/Act%20Che%20Aca%20Sci%20Hun69,%20311.pdf)

? Tóth, J., Rudzinsk, W., Waksmund, A., Jaroniec, M. and Sokolows, S. (1974), Adsorption of gases on heterogeneous solid-surfaces - Energy-distribution function corresponding to a new equation for monolayer adsorption. *Acta Chimica Academiae Scientarium Hungaricae*, **82** (1), 11-20.

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? Tóth, J. and Koltay, L. (1991), Data evaluating method in emission spectrochemical analysis for the addition method. 1. *Acta Chimica Academiae Scientarium Hungaricae*, **128** (2), 281-287.

Abstract: To evaluate the analytical results of addition method in spectrochemical analysis, to decrease the error of the determination, and to increase the reliability of the results, a new evaluation method has been applied. The unknown concentration was determined by iteration in such a way that the minimum value of residual error was found for the linear analytical curve. This data processing can be applied not only in spectrochemistry but in other analytical methods, too, where the addition method can be used.

Keywords: Spectrographic Analysis

? Tóth, J. (1992), Monolayer adsorption on heterogeneous gas solid interfaces. 2. Differential adsorptive potentials and energy-distribution functions. *Acta Chimica Academiae Scientarium Hungaricae*, **129** (1), 51-62.

Abstract: In the frame of the uniform interpretation of gas/solid monolayer adsorption an implicit function of differential adsorptive potential has been derived. This function, in explicit forms can be attributed to all isotherm equations referring to the monolayer adsorption.

A new approximative method was applied for calculation of the energy distribution function (EDF), which may also be joined to the uniform interpretation. Three examples were investigated for the applicability of the EDF-s, also in the case, when the interaction energies between the adsorbed molecules are not negligible.

Keywords: Isotherms, Surfaces, Equation

? Tóth, J. (1992), Monolayer adsorption on heterogeneous gas solid interfaces. 1. Uniform interpretation and a new isotherm equation. *Acta Chimica Academiae Scientarium Hungaricae*, **129** (1), 39-49.

Abstract: The paper draws attention to the possibility of a uniform interpretation of gas/solid adsorption on heterogeneous surfaces. The principle of this interpretation lies in the Gibbs equation which can be rewritten in a form of differential equation including measurable data only. In the frame of this interpretation a new isotherm equation was derived which takes into account the adsorbent heterogeneity and the interaction energies between molecules adsorbed.

? Turanyi, T. and Tóth, J. (1992), Classics revisited - Comments to an article of Frankkamenetskii on the Quasi-Steady-State approximation. *Acta Chimica Academiae Scientarium Hungaricae*, **129** (6), 903-907.

Abstract: Due to the growing need for the simulation of distributed parameter systems, the method of quasi-steady-state approximation (QSSA) has been revitalized. The wide-spread use of the QSSA is hindered because of the lack of a general condition for the application of the QSSA for kinetic systems of arbitrary size. An early article of Frank-Kamenetskii [3], gave such a condition but this work remained almost completely unknown. This paper is commented here in the light of recent results of chemical kinetics and of the theory of differential equations. The English translation of the complete original paper is also presented.

# Title: Acta Chimica Hungarica-Models in Chemistry

Full Journal Title: Acta Chimica Hungarica-Models in Chemistry

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0231-3146

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Akademiai Kiado, Budapest

Publisher Address:

Subject Categories:

: Impact Factor

? Temkin, M.J. and Pyzhev, V. (1940), ??. *Acta Chimica Hungarica-Models in Chemistry*, **12**, 217.

? Zavattiero, E., Musmeci, L., Castagnoli, O., Alimonti, A. and Caroli, S. (1991), Use of incinerator slags as road-bed and heavy-metals release. *Acta Chimica Hungarica-Models in Chemistry*, **128** (4-5), 519-526.

Abstract: The problems associated with the use of slags from municipal solid waste incinerators as road-bed arise from the possibility of undesired effects on environment and human health due to the release of heavy metals through atmospheric precipitations. The aim of the research we are carrying out is to evaluate the heavy metals release by means of tests which simulate the rain leaching action. The first part of the research, the results of which are reported in this paper, studied the release of several heavy metals in water solutions at different pH periodically renewing the liquid phase in contact with the solid phase (slags)

Keywords: Refuse

? Tóth, J. (1992), Monolayer adsorption on heterogeneous gas solid interfaces. 2. Differential adsorptive potentials and energy-distribution functions. *Acta Chimica Hungarica-Models in Chemistry*, **129** (1), 51-62.

Abstract: In the frame of the uniform interpretation of gas/solid monolayer adsorption an implicit function of differential adsorptive potential has been derived. This function, in explicit forms can be attributed to all isotherm equations referring to the monolayer adsorption.

A new approximative method was applied for calculation of the energy distribution function (EDF), which may also be joined to the uniform interpretation. Three examples were investigated for the applicability of the EDF-s, also in the case, when the interaction energies between the adsorbed molecules are not negligible.

Keywords: Isotherms, Surfaces, Equation

? Tóth, J. (1992), Monolayer adsorption on heterogeneous gas solid interfaces. 1. Uniform interpretation and a new isotherm equation. *Acta Chimica Hungarica-Models in Chemistry*, **129** (1), 39-49.

Abstract: The paper draws attention to the possibility of a uniform interpretation of gas/solid adsorption on heterogeneous surfaces. The principle of this interpretation lies in the Gibbs equation which can be rewritten in a form of differential equation including measurable data only. In the frame of this interpretation a new isotherm equation was derived which takes into account the adsorbent heterogeneity and the interaction energies between molecules adsorbed.

? Tóth, J. (1992), Monolayer adsorption on heterogeneous gas solid interfaces. 2. Differential adsorptive potentials and energy-distribution functions. *Acta Chimica Hungarica-Models in Chemistry*, **129** (1), 51-62.

Abstract: In the frame of the uniform interpretation of gas/solid monolayer adsorption an implicit function of differential adsorptive potential has been derived. This function, in explicit forms can be attributed to all isotherm equations referring to the monolayer adsorption.

A new approximative method was applied for calculation of the energy distribution function (EDF), which may also be joined to the uniform interpretation. Three examples were investigated for the applicability of the EDF-s, also in the case, when the interaction energies between the adsorbed molecules are not negligible.

Keywords: Isotherms, Surfaces, Equation

# Title: Acta Chimica Sinica

Full Journal Title: [Acta Chimica Sinica](http://sioc-journal.cn/Jwk_hxxb/EN/volumn/volumn_1311.shtml)

ISO Abbreviated Title: acta chim. Sin.

JCR Abbreviated Title: Acta Chim Sinica

ISSN: 0567-7351

ISSUES, Year: 24

Language: Chinese

Journal Country/Territory: Peoples R China

Publisher: Science Press

Publisher Address: 16 Donghuangchenggen North St, Beijing 100717, Peoples R China

Subject Categories: Chemistry, Multidisciplinary

Impact Factor: 0.845 (2005)

? Zhu, J.H. and Xu, Q.H. (1997), Investigation on the solid strong bases derived from supported KF. *Acta Chimica Sinica*, **55** (5), 474-479.

Full Text: [1997\Act Chi Sin55, 474.pdf](1997/Act%20Chi%20Sin55,%20474.pdf)

Abstract: In the present study, the reason for the high basicity of KF, Al2O3 and the nature of the basic active sites on KF, Al2O3 were explored. KF modification has also been applied to other metal oxides and molecular sieves. Hydration could produce some partially hydrated fluoride species and promote CO2 adsorption on KF and KF, CaF2, but the basicity of these species was too weak to catalyze 1 - butene isomerization at 273K. The effect of pretreatment temperature on the basicity of KF, Al2O3 was examined. Based on the results of Temperature Programmed Decomposition (TPDE), FTIR and probe reaction, the [Al-OH ... F-] species were recognized to be the main active species on KF, Al2O3 in 1 - butene isomerization at 273K. Dehydroxylation at high temperature could destroy or suppress these species and caused deactivation on KF, Al2O3. KF was firstly reported to be supported on AlPO4 - 5 molecular sieve. Through the interaction with the support, KF modification can create strong basic sites on AlPO4 - 5 and catalyse the butene isomerization at 273K.

Keywords: Alumina, Potassium Fluoride, Reagents

? Wang, G.Z., Li, P., Ma, Y.R., Li, F.Q. and Fang, R.C. (1998), Adsorption and electrodeposition of metal ions on the surface of porous silicon. *Acta Chimica Sinica*, **56** (2), 171-177.

Full Text: [1998\Act Chi Sin56, 171.pdf](1998/Act%20Chi%20Sin56,%20171.pdf)

Abstract: The effect of metal ions adsorption process on the native surface of porous silicon as-anodized is reported in this paper. The adsorption effect is discussed in term of the negative potential of native surface of porous silicon due to the hole depletion during anodization, and the negative potential vanishes as the sample is stored above one month. In the beginning of the electrodeposition process, the current density decreases with time under a certain voltage and the exponential relationship is explained in term of a simple model.

? Liu, Y., Liang, P., Guo, L. and Lu, H.B. (2005), Study on the adsorption behavior of heavy metal ions on nanometer TiO2 supported on silica gel. *Acta Chimica Sinica*, **63** (4), 312-316.

Full Text: [2005\Act Chi Sin63, 312.pdf](2005/Act%20Chi%20Sin63,%20312.pdf)

Abstract: Nanometer TiO2 supported on silica gel (supported nanometer TiO2) was prepared by Sol-Gel method. The product was characterized using XRD and SEM. The adsorption behavior of supported nanometer TiO2 towards Cd2+, Cr3+, Cu2+ and Mn2+ was investigated by ICP-AES. It was found that the adsorption percentages of the metal ions studied were more than 90% in pH 8.0 similar to 9.0, and 0.5 mol/L HNO3 was sufficient for complete elution. The adsorption capacity of supported nanometer TiO2 for Cd2+, Cr3+, Cu2+ and Mn2+ was found to be 8.3, 13.1, 12.6 and 5.1 mg/g, respectively. A method using supported nanometer TiO2 as adsorbent coupled with ICP-AES has been developed for the separation/preconcentration and determination of Cd2+, Cr3+, Cu2+ and Mn2+ in environmental sample.

Keywords: Sol-Gel Method, Supported Nanometer TiO2, Adsorption, Heavy Metal Ion, ICP-AES, Size Titanium-Dioxide, ICP-AES, Particles

? Liang, Z.P., Feng, Y.Q., Liang, Z.Y., Meng, S.X. and Liu, X.G. (2006), Adsorption equilibrium and kinetics of urea nitrogen onto dialdehyde cellulose under catalysis of immobilized urease. *Acta Chimica Sinica*, **64** (3), 255-260.

Full Text: [2006\Act Chi Sin64, 255.pdf](2006/Act%20Chi%20Sin64,%20255.pdf)

Abstract: The adsorption of urea nitrogen onto dialdehyde cellulose (DAC) under catalysis of immobilized urease in gelatin (IU) was studied in batch system. The equilibrium of urea nitrogen adsorption onto DAC with different degree of oxidation (DO) and the kinetics of adsorption with respect to the DO of DAC, the initial urea nitrogen concentration, temperature and DAC/IU weight ratio were investigated. Equilibrium data were fitted very well to the Langmuir mode in the entire saturation concentration range, indicating that the adsorption was of monomolecular layer and chemical adsorption. The DO of DAC, initial urea nitrogen concentration, temperature and DAC/IU weight ratio affected significantly the adsorption capacity. The experimental data were fitted well to the second-order kinetic mode, indicating that the adsorption process followed the second-order kinetic mode. The rate constants were evaluated, with the apparent activation energy of 6.0 kJ.mol(-1) for the adsorption of the urea nitrogen onto DAC under catalysis of IU at DO 88% of DAC, initial urea nitrogen concentration 638.3 mg.L-1 and DAC/IU weight ratio 10 : 1.

Keywords: Activation, Activation Energy, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Batch, Batch System, Capacity, Catalysis, Cellulose, Data, Dialdehyde Cellulose, Equilibrium, Immobilized Urease, Kinetic, Kinetics, Langmuir, Membrane, Microencapsulated Urease, Nitrogen, Oxidation, Process, Second-Order, System, Temperature, Urea Nitrogen, Weight, Zirconium-Phosphate

? Xia, Z.Q., Mi, J.G. and Zhong, C.L. (2007), Study on interfacial tension of associating fluid with high-order FMSA. *Acta Chimica Sinica*, **65** (5), 373-378.

Full Text: 2007\Act Chi Sin65, 373.pdf

Abstract: The First-order mean-spherical approximation (FMSA) was combined with renormalization group (RG) transformation and applied to global phase behavior calculation. The analytical radial distribution function (RDF) and the direct correlation function (DCF), which were obtained from the FMSA, were applied to construct the density functional theory (DFT). In order to recover the bulk vapor and liquid densities of the Lennard-Jones fluid, the high-order terms of FMSA were included into the DFT to replace the ordinary second-order expansion. The method was extended to the associating fluid, and the calculated density profiles and interfacial tension are much better than those from ordinary DFT when compared with molecular simulation data.

Keywords: Adsorption, Behavior, Calculation, Classical Fluids, Correlation, Data, DCF, Density Functional Theory, Density-Functional Theory, Dft, Distribution, Equilibrium, First Order, Function, Global, Gradient Theory, High-Order Fmsa Expansion, Interfacial Tension, Lennard-Jones Fluid, Liquid, Liquid-Vapor Interface, Mar, Molecular Simulation, Monte-Carlo-Simulation, Nonuniform, Profiles, Radial Distribution, Radial Distribution Function, RDF, Second Order, Second-Order, Simulation, Theory, Transformation, Yukawa Fluid

? Zang, Y.B., Hou, W.G. and Wang, W.X. (2007), Adsorption-desorption of chromium(VI) on Mg-Al hydrotalcite-like compounds Part I. Adsorption. *Acta Chimica Sinica*, **65** (9), 773-778.

Full Text: [2007\Act Chi Sin65, 773.pdf](2007/Act%20Chi%20Sin65,%20773.pdf)

Abstract: Adsorption properties of Cr(VI) on Mg-Al hydrotalcite-like compounds (HTlc) were studied. The influences of initial solution pH, additives of inorganic electrolytes, NaCl, NaNO3, Na2SO4 and Na3PO4, and organic ligands, EDTA and citric acid on the adsorption of Cr(VI) were investigated, and the adsorption mechanism was discussed in combination with the results of IR and XRD experiments. It was found that Mg-Al HTlc showed good adsorption ability for Cr(VI) from solution, indicating that the use of HTlc as a promising inorganic sorbent for the removal of Cr(VI) from wastewater is possible. The adsorption kinetics and the adsorption isotherms of Cr(VI) on the HTlc can be described by the pseudo-second order kinetic and Langmuir isotherm, respectively. With increasing pH, the adsorption amount decreased. The additives of inorganic electrolytes, NaCl, NaNO3, Na2SO4 and Na3PO4, and organic ligands, EDTA and citric acid, could obviously restrain the adsorption of Cr(VI) on the HTlc, and the orders of the restraining ability on the adsorption are Na3PO4≥Na2SO4≥NaCl>>NaNO3 and citric acid＞EDTA, respectively. The adsorption of Cr(VI) on the HTlc arose from the anion exchange in the interlayer space and the adsorption on the external surface, respectively. Furthermore, the adsorption layer of Cr(VI) on the external surface may be divided into two layers: the inner-sphere surface complexes arising from the chemical binding and the outer-sphere surface complexes arising from the electrostatic interaction.

Keywords: Acid, Additives, Adsorption, Adsorption Isotherms, Adsorption Kinetics, Adsorption Mechanism, Anion Exchange, Aqueous-Solution, Binding, Chemical, Chromate, Chromium(VI), Citric Acid, Complexes, Cr(VI), Dye, EDTA, Electrolytes, Hydrotalcite-Like Compound, Inorganic, Interaction, IR, Isotherm, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Layered Double Hydroxide, Layered Double Hydroxides, Mechanism, Organic, Organic Ligands, pH, Properties, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Solution pH, Sorption, Surface, Waste-Water, Wastewater, XRD

? Yuan, X., Liu, Y.Y., Zhuo, S.P., Xing, W., Sun, Y.Q., Dai, X.D., Liu, X.M. and Yan, Z.F. (2007), Synthesis of ordered mesoporous carbon and its application in aqueous macromolecular adsorption. *Acta Chimica Sinica*, **65** (17), 1814-1820.

Full Text: [2007\Act Chi Sin65, 1814.pdf](2007/Act%20Chi%20Sin65,%201814.pdf)

Abstract: Series of ordered mesoporous carbons, OMCs, and mircoporous carbon, CFY, were synthesized using ordered mesoporous silica SBA-15 and NaY zeolite as hard template, respectively. N2 adsorption tests showed that the synthesized mesoporous carbons possess abundant mesopores and centralized mesopore distribution. Methylene blue was used as probe molecule to investigate its adsorption behaviors on OMCs and CFY Results showed that the mesopores of which the pore size is larger than 3.5 nm is crucial for the adsorption capacity and adsorption velocity of methylene blue. Theoretical studies showed that the adsorption kinetics of methylene blue on mesoporous carbons can be well depicted using pseudo-second-order kinetics model.

Keywords: Activated Carbons, Adsorption, Adsorption Capacity, Adsorption Kinetics, Adsorption Velocity, Application, Capacity, Carbon, Copolymer, Distribution, Dyes, Kinetics, Kinetics Model, Mesopore, Mesopores, Mesoporous, Mesoporous Carbon, Mesoporous Silica, Methylene Blue, Mircoporous Carbon, Model, N2, N2 Adsorption, N2-Adsorption, N2, Nay Zeolite, Ordered Mesoporous Carbon, Ordered Mesoporous Silica, Pore, Pore Size, Pore Structure, Probe, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, SBA-15, Silica, Size, Sorption, Template, Tests, Tires, Triblock, Velocity, Waste-Water, Zeolite

? Zhang, D., Su, H.D., Gao, H. and Liu, J.C. (2007), Adsorption behavior of barium-strontium titanate powder coated by dithizone for lead ion in water. *Acta Chimica Sinica*, **65** (22), 2549-2554.

Full Text: [2007\Act Chi Sin65, 2549.pdf](2007/Act%20Chi%20Sin65,%202549.pdf)

Abstract: Barium-strontium titanate (BST) powder was prepared by using an oxalate coprecipitate method and was modified by dithizone coating through a maceration method, gaining a new sort of adsorbent. XRD, SEM and FT-IR analyses were used to characterize the powder and surface modification. The adsorption behavior of lead on the BST powder coated by dithizone was investigated. The results showed that the dithizone was coated on the BST powder through hydrogen bonding between the hydroxyl groups and oxygen atoms on the surface of the BST and dithizone. The lead ion in water could be adsorbed quantitively on the dithizone coated BST when the pH exceeded 4.0, and the adsorption equilibrium could be obtained in 5 min at room temperature. The adsorption behavior followed a Langmuir adsorption isotherm and a pseudo-second-order kinetic model. The enthalpy of adsorption (Delta H) was 19.42 kJ center dot mol-1 and the activation energy (E-a) was 22.187 kJ center dot mol-1 for the adsorption. The values show that the adsorption of lead ion by dithizone coated. BST powder is an endothermic process. The lead ion adsorbed on the BST powder coated by dithizone could be completely eluated using 1 mol center dot L-1 HNO3. A new method for determination of trace lead ion in water based on this dithizone coated BST powder separation/preconcentration and flame atomic absorption spectrometry (FAAS) determination was proposed. The method has been applied to the determination of trace lead ion in water samples with satisfactory results.

Keywords: Acid, Adsorbent, Adsorption, Adsorption Behavior, Adsorption Equilibrium, Alumina, Barium-Strontium Titanate, Coating, Equilibrium, FAAS, Isotherm, Lead, Metal-Ions, Preconcentration, Silica-Gel, Sorbent, Spectrometry

? Li, J.P., Lin, Q.Y. and Yan, Y. (2008), Character of Cr(VI) biosorption by the leaf cell biomass of hyperaccumulative plant leersia hexandra swartz. *Acta Chimica Sinica*, **66** (23), 2646-2652.

Full Text: [2008\Act Chi Sin66, 2646.pdf](2008/Act%20Chi%20Sin66,%202646.pdf)

Abstract: Adsorption of Cr(VI) by the hygrophyte with chromium hyper-accumulative plant Leersia Hexandra Swart was studied, with the effect of physico-chemical parameters pH and contact time focused. The test results of sorption kinetics conformed to the pseudo-second order kinetics equation. Meanwhile, the correlation coefficient values indicated that the data of sorption thermodynamic fit better the Langmuir model. The adsorption process was found to be first controlled by the electrostatic interaction due to the formation of H+/H3O+ barrier, and then the function groups could coordinate the Cr(VI). The morphology and elemental distribution in the leaf cell biomass were evaluated by scanning electron microscopy (SEM) and energy dispersive spectrometry (EDS). IR analysis of Leersia Hexandra Swart biomass revealed the presence of carboxyl, amide, hydroxyl and carbonyl groups, which are responsible for biosorption of the metal ion. The functional atoms bind Cr(VI) with different interaction on the surface of cell wall, which indicates the selectivity of adsorption.

Keywords: Adsorption, Adsorption, Analysis, Biomass, Biosorption, Cadmium Accumulation, Chromium, Chromium(VI), Contact Time, Cr(III) Removal, Cr(VI), Data, Ions, IR, Kinetics, l., Langmuir, Langmuir Model, Leaf, Leersia Hexandra Swartz, Model, Morphology, pH, Process, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Recovery, Selectivity, SEM, Sorption, Sorption Kinetics, Speciation, Thermodynamic, Tolerance

? Hua, Y.J., Wang, C.T., Yang, X., Tong, Y.X. and He, M.X. (2009), Adsorption properties of Keggin-type Fe(III)-substituted heteropolyanion by D301R resin. *Acta Chimica Sinica*, **67** (5), 355-360.

Full Text: [2009\Act Chi Sin67, 355.pdf](2009/Act%20Chi%20Sin67,%20355.pdf)

Abstract: The adsorption properties of the D301R resin towards Fe(III) substituted heteropolyanion PW11O39Fe(III)(H2O)4 (PW11Fe) and impacts of pH and temperature on the adsorption were investigated in detail. The adsorption kinetic curves and adsorption isotherm curves were also determined at different temperature. It was found that the adsorption capacities of PW11Fe on the resin increased with pH increase in the aqueous solution from 2 to 8, and decreased with the increase of temperature. The adsorption kinetics follows the pseudo-second-order model controlled by a surface process. The rate constant k2 is 9.33🞨10-4 g.mg-1.min-1, which decreased with the increase of temperature. The adsorption isotherm curve is consistant with Freundlich isotherms and the adsorption enthalpy calculated is about 40 kJ.mol-1, indicating a physical adsorption process.

Keywords: Adsorption Isotherm, Adsorption Kinetics, Anion Exchange Resin, Aqueous-Medium, Electro-Fenton Process, Fe(III)-Substituted Heteropolyanion, Landfill Leachate, Mineralization, Removal, Water

? Xing, W., Zhuo, S.P., Si, W.J. and Yuan, X. (2009), Preparation of magnetic ordered mesoporous carbon and its drug adsorption behavior. *Acta Chimica Sinica*, **67** (8), 761-766.

Full Text: [2009\Act Chi Sin67, 761.pdf](2009/Act%20Chi%20Sin67,%20761.pdf)

Abstract: A co-casting method has been introduced to synthesize Fe/OMC, a kind of mesoporous carbon with iron nanoparticles embedded in the carbon pore-wall. The as-prepared materials were characterized by a variety of techniques such as N-2 adsorption, scanning electron microscopy (SEM), X-ray diffraction and vibrating-sample magnetometry (VSM). Results show that the Fe/OMC basically maintains an ordered mesoporous structure. alpha-Fe nanoparticles exist in the carbon framework and show superparamagnetic behavior. Adsorption isotherms of tetracycline hydrochloride (TH) on the Fe/OMC show that the mesopore surface area and mesopore volume are crucial factors for the drug uptakes. Desorption kinetic studies show that the pore size was vital to the desorption rate of TH. The sample with larger pore size has higher desorption rate of TH.

Keywords: Adsorption, Copolymer, Desorption, Drug Delivery, Dye, Fe, Carbon Composite, Magnetic, Nanoparticles, Silica, Triblock

? Zhang, D. and Hou, P. (2009), Preparation of nano-calcium titanate powder and its adsorption behavior for lead ion and cadmium ion in water. *Acta Chimica Sinica*, **67** (12), 1336-1342.

Full Text: [2009\Act Chi Sin67, 1336.pdf](2009/Act%20Chi%20Sin67,%201336.pdf)

Abstract: Nano-calcium titanate powder was successfully prepared by a citric acid complex sol-gel method, and characterized by X-ray diffraction (XRD), transmission electron microscopy (TEM) and Fourier transform infrared spectrophotometry (FTIR). Its adsorption capabilities for lead ion and cadmium ion were investigated. Taking the cadmium ion as an example, the thermodynamics and kinetics of the adsorption were completely studied. The results showed that the calcium titanate was perovskite nanometer powder. The particle diameter relied on the burning temperature, which became larger at the higher burning temperature. When the temperature was at 600°C for 2 h, the average particle diameter was the smallest, about 20 nm. This adsorbent had strong adsorption capacity for the lead ion and cadmium ion in water at pH 4 similar to 8. The adsorption behavior followed a Langmuir adsorption isotherm and a pseudo-second-order kinetic model. The enthalpy change (Δ*H*) of the adsorption process was 39.312 kJ/mol. At various temperatures, Gibbs free energy changes (Δ*G*) were negative, and entropy changes (Δ*S*) were positive. The activation energy (E-a) was 20.359 kJ/mol for the adsorption. These showed that the adsorption of cadmium ion by the nano-calcium titanate powder was an endothermic and spontaneous physical process. The adsorbed lead ion and cadmium ion could be completely eluated using 1 mol.L-1 HNO3. The pre-concentration factors for lead ion and cadmium ion were all more than 200. The method has been applied to the preconcentration and flame atomic absorption spectrometry (FAAS) determination of trace lead ion and cadmium ion in water samples. The recoveries were 96.3%similar to 107.2% and 93.5%similar to 104.0% respectively, and the results were found to be in agreement with those by graphite furnace atomic absorption spectrometry.

Keywords: Absorption, Activation, Activation Energy, Adsorbent, Adsorption, Adsorption Behavior, Adsorption Capacity, Adsorption Isotherm, Atomic Absorption Spectrometry, Behavior, Cadmium, Cadmium Ion, Calcium, Capacity, Catio3 Powders, Changes, Citric Acid, Dithizone, Electron Microscopy, Endothermic, Energy, Enthalpy, Entropy, FAAS, Flame Atomic Absorption Spectrometry (FAAS), FTIR, Gibbs Free Energy, Graphite, Isotherm, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Adsorption Isotherm, Lead, Lead Ion, Model, Nano-Calcium Titanate Powder, pH, Physical, Pre-Concentration, Preconcentration, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Resin, Sol-Gel, Spectrometry, Spectrophotometry, TEM, Temperature, Thermodynamics, Transmission, Water, Water Samples, X-Ray, X-Ray Diffraction, XRD

? Xing, W., Zhuo, S.P., Gao, X.L. and Yuan, X. (2009), Adsorption behavior of NPE on ordered Mesoporous carbons. *Acta Chimica Sinica*, **67** (15), 1771-1778.

Full Text: [2009\Act Chi Sin67, 1771.pdf](2009/Act%20Chi%20Sin67,%201771.pdf)

Abstract: Ordered mesoporous carbons (OMC) with varying pore sizes were synthesized using ordered mesoporous silica SBA-15 as hard templates. N-2, adsorption tests show that the synthesized OMCs possess abundant mesopores with a centralized mesopore distribution. Nonylphenol ethoxylate (NPE) was used as a probe molecule to investigate its adsorption behavior on OMC. As evidenced by adsorption tests, the isotherms of NPE on OMC could be well simulated by a Langmuir adsorption model. The surface area of a pore larger than 1.5 nm, was found to be a crucial factor for the adsorption capacity of NPE, while the most probable pore diameter of OMC was found to be vital to the adsorption rate of NPE. Results also show that adsorption temperature has larger effects on adsorption rate than adsorption capacity. Theoretical studies show that the adsorption kinetics of NPE on OMC can be well depicted by using a pseudo-second-order kinetic model.

Keywords: Activated Carbon, Adsorption, Adsorption Behavior, Adsorption Capacity, Adsorption Isotherm, Adsorption Kinetics, Adsorption Rate, Aqueous-Solutions, Behavior, Capacity, Copolymer, Desorption, Distribution, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Mesopore, Mesoporous, Mesoporous Carbon, Mesoporous Silica, Model, N2, N2, Phenol, Pore Structure, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, SBA-15, Silica, Surface, Surface Area, Temperature, Templates, Triblock, Water

? Cao, X.Y., Li, L. and Chen, H. (2010), Preparation, characterization and adsorbability of magnetic carboxymethyl cellulose/Fe3O4 nano-composite particles. *Acta Chimica Sinica*, **68** (15), 1461-1466.

Full Text: [2010\Act Chi Sin68, 1461.pdf](2010/Act%20Chi%20Sin68,%201461.pdf)

Abstract: CMC-Fe3O4 nano-composite particles were prepared in the carboxymethyl cellulose (CMC) solution by a modified oxidation deposition method, and characterized by TEM, XRD, IR, ZP (zeta potential) and VSM (vibrating sample magnetometer). The adsorption of Cu2+ on CMC-Fe3O4 was further researched. Different pH, reaction time and Cu2+ initial concentration affecting adsorption of CMC-Fe3O4 was studied. The results show that CMC-Fe3O4 is inverse spinel structure; the particle size is 40 nm on an average and dispersed homogeneously in water. Carboxymethyl cellulose molecules are chemically adsorbed on the surface of Fe3O4 nano-particles. Its saturation magnetization is 36.74 eμ/g. The maximum adsorption for Cu2+ occurred at pH = 7 in water. The adsorption equilibrium time was reached in 1.5 h. The adsorption kinetics and isotherm data were well described by pseudo-second-order equation and Langmuir isotherm models, respectively. The adsorption mechanism of Cu2+ was main complexation reaction.

Keywords: Adsorption, Adsorption Equilibrium, Adsorption Kinetics, Adsorption Kinetics And Isotherm, Adsorption Mechanism, Carboxymethyl Cellulose, Cellulose, Characterization, Chitosan, Cmc, Complexation, Concentration, Cu2+, Data, Deposition, Dye, Equilibrium, Fe3O4, Fe3O4 Nano-Particle, IR, Isotherm, Isotherm Models, Kinetics, Langmuir, Langmuir Isotherm, Magnetic Particle, Mechanism, Microspheres, Models, Modified, Nanocomposite, Nanocomposite Particles, Nanoparticles, Oxidation, Oxidation Deposition Method, Particle Size, Particles, pH, Potential, Preparation, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Equation, Removal, Saturation, Saturation Magnetization, Shell, Size, Solution, Spinel, Structure, Surface, TEM, Water, XRD, Zeta Potential, Zinc

? Zhang, D., Wang, M. and Tan, Y.L. (2010), Preparation of porous nano-barium-strontium titanate by sorghum straw template method and its adsorption capability for heavy metal ions. *Acta Chimica Sinica*, **68** (16), 1641-1648.

Full Text: [2010\Act Chi Sin68, 1641.pdf](2010/Act%20Chi%20Sin68,%201641.pdf)

Abstract: Using sorghum straw as template, porous nano-barium-strontium titanate (SPBST) was successfully prepared by the sot-gel method, and characterized by X-ray diffraction (XRD), scanning electron microscope (SEM) and fourier transform infrared spectrophotometry (FTIR). Its adsorption capabilities for heavy metal such as lead ion, cadmium ion and zinc ion were studied. The effects of the calcining temperature on the structure of porous adsorbent and its adsorbing capacity were discussed. Moreover, taking the cadmium ion as an example, the thermodynamics and kinetics of the adsorption were completely investigated. The results showed that the sorbents were porous, buildup perovskite nano-barium-strontium titanate, and the average particle diameters of crystalloid were not more than 20 nm. The crystalloids of the sorbent became agglomerated when the calcining temperature was too high, which was infaust for the adsorption, but it incompact when the calcining temperature was too low. The optimum condition was at 750ºC for 6 h. In the medium of pH 5 similar to 8, the adsorption time was 70 min, and capacity of adsorption were 191.51 mg.g-1 for lead, 19.00 mg.g-1 for cadmium and 19.97 mg.g-1 for zinc. The adsorption behavior followed a Freundlich adsorption isotherm and a pseudo-second-order kinetic model. The enthalpy change (ΔH) of the adsorption process was 35.905 kJ.mol-1. At various temperatures, Gibbs free energy changes (ΔG) were negative, and entropy changes (ΔS) were positive. The activation energy (E-a) was 62.430 kJ.mol-1 for the adsorption. These showed that the adsorption was an endothermic and spontaneous physical process. The adsorbed heavy metal ion could be completely eluated using 1 mol.L-1 HNO3. The pre-concentration factors for all studied heavy metal ions were all more than 200. The method has been applied to the preconcentration and FAAS determination of trace lead, cadmium and zinc ion in water samples. The recoveries were 90.3%similar to 103.4%, 91.5%similar to 103.2% and 94.35%similar to 101.1% respectively.

Keywords: Activation, Activation Energy, Adsorbent, Adsorption, Adsorption Behavior, Adsorption Isotherm, Behavior, Biotemplate, Biotemplate Method, Cadmium, Cadmium Ion, Capacity, Changes, Crystalloid, Endothermic, Energy, Enthalpy, Entropy, Faas, Freundlich, Freundlich Adsorption Isotherm, FTIR, Gibbs Free Energy, Heavy Metal, Heavy Metal Ion, Heavy Metal Ions, Ions, Isotherm, Kinetic, Kinetic Model, Kinetics, Lead, Lead Ion, Lead-Ion, Metal, Metal Ions, Microspheres, Model, pH, Physical, Porous Nano-Barium-Strontium Titanate, Powder, Pre-Concentration, Preconcentration, Preparation, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, SEM, Sorbent, Sorbents, Sorghum Straw, Spectrometry, Spectrophotometry, Straw, Structure, Temperature, Template, Thermodynamics, Water, Water Samples, X-Ray, X-Ray Diffraction, XRD, Zinc, Zinc Ion

? Fan, C.H., Zhang, Y.C. and Zhang, Y. (2010), Characteristics of Cu(II) removal by low-cost novel adsorbent of rice husk. *Acta Chimica Sinica*, **68** (21), 2175-2180.

Full Text: [2010\Act Chi Sin68, 2175.pdf](2010/Act%20Chi%20Sin68,%202175.pdf)

Abstract: Rice husk was used as adsorbent to study Cu(II) removal efficiency from aqueous solution on the basis of adsorption kinetics and isotherm equations, breakthrough curves affected by flow rates and initial pH values were analyzed, surface characteristics of rice husk and Cu(II) removal mechanism was investigated with the help of SEM, FTIR, XRD and XRF The adsorption process fit pseudo second order kinetics equation and Langmuir isotherm equation with adsorption capacity on Cu(II) 1 6173 mg center dot g(-1) The reaction could happen spontaneously Environmental factors could affect shapes of breakthrough curves to some extent Functional groups of OH and SiO-CxHy played an important role for Cu(II) removal, characteristic adsorption band of cellulose was found in XRD spectra, while no wave band of Cu(II) appeared after adsorption Cu(II) was detected on rice husk after adsorption by XRF, it proved the reaction feasibility.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Adsorption Kinetics, Aqueous-Solutions, Biomass, Biosorption, Breakthrough, Cadmium, Capacity, Cellulose, Copper, Cu(II), Cu(II) Removal, Environmental Factors, FTIR, Functional Groups, Heavy-Metal, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Lead(II), pH, Process, Pseudo Second Order, Pseudo-Second-Order, Removal, Removal Efficiency, Removal Mechanism, Rice, Rice Husk, Second-Order, SEM, Sorption, Tea Factory Waste, XRD, XRF

? Ni, Z.M., Wang, Q.Q., Yao, P., Liu, X.M. and Li, Y.A. (2011), Kinetics and thermodynamics for Acid Red 88 adsorption on calcined layered double hydroxides. *Acta Chimica Sinica*, **69** (5), 529-535.

Full Text: 2011\Act Chi Sin69, 529.pdf

Abstract: The adsorption thermodynamics and mechanism of acid red 88 (AR88) in aqueous solution adsorbed by LDO were investigated. The adsorption isotherms were measured at different temperatures, and the thermodynamic functions were also calculated. The results indicate that the equilibrium Isotherms of uptake of AR88 by LDO were well fitted to the Langmuir equation, and thermodynamic parameters such as ΔG(circle minus), ΔK-circle minus and ΔS-circle minus were calculated from Langmuir constants. The negative values confirm the spontaneous and exothermic nature of the adsorption process. Three kinetics models were used to fit the kinetics experimental data, and it was found that the pseudo-second order kinetics model could be used to describe the uptake process appropriately. The value of Ea was calculated to be 54.53 kJ.mol-1. The size and arrangement of AR88 molecular on LDHs were simulated using the CASTEP and Focite program, and speculation on mechanisms was that adsorption of AR88 on LDHs surface accompanied with a little AR88 intercalated into the layer.

Keywords: Acid Red 88, Adsorption, Aqueous-Solution, Behavior, Dye, Equilibrium, Hydration, Hydrotalcite-Like Compounds, Isotherms, Kinetics, Langmuir, Mg, Al Layered Double Hydrotalcite, Molecular-Dynamics Simulation, Removal, Sorption, Surface, Thermodynamic, Thermodynamic Parameters, Thermodynamics

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Trstenjak, B. and Perdih, A. (2005), Sorption of polychlorobiphenyls by the fungus *Phanerochaete chrysosporium*. *Acta Chimica Slovenica*, **46** (3), 307-313.

Full Text: [2005\Act Chi Slo46, 307.pdf](2005/Act%20Chi%20Slo46,%20307.pdf)

Abstract: The pellets of the fungus Phanerochaete chrysosporium remove the majority of polychlorobiphenyls from contaminated tap water, especially those that are less ortho substituted and contain three or more chlorine atoms. A fluid bed process seems to be promising in this respect.

Suteu, D. and Bilba, D. (2005), Equilibrium and kinetic study of reactive dye Brilliant Red HE-3B adsorption by activated charcoal. *Acta Chimica Slovenica*, **52** (1), 73-79.

Full Text: [2005\Act Chi Slo52, 73.pdf](2005/Act%20Chi%20Slo52,%2073.pdf)

Abstract: The commercially powdered activated charcoal was used for the sorption of reactive dye Brilliant Red HE-3B from aqueous solutions. The effect of solution pH, initial dye concentration, temperature and sorption time on dye removal was studied. The equilibrium sorption isotherms have been analysed by the linear, Freundlich and Langmuir models. The Langmuir isotherms have the highest correlation coefficients. The apparent thermodynamic parameters were calculated and the obtained values support the conclusion that the reactive dye molecules sorbs by entropy-driven, endothermic process. The kinetic of the sorption was analysed using the pseudo-first order and pseudo-second order kinetic models. The data showed that the second-order equation was the more appropriate, which indicate that the intraparticle diffusion is the rate limiting factor.

Keywords: Sorption, Activated Charcoal, Reactive Dye, Equilibrium, Kinetic

Horsfall, Jr., M. and Spiff, A.I. (2005), Equilibrium sorption study of Al3+, Co2+ and Ag+ in aqueous solutions by fluted pumpkin (Telfairia occidentalis HOOK f) waste biomass. *Acta Chimica Slovenica*, **52** (2), 174-181.

Full Text: [2005\Act Chi Slo52, 174.pdf](2005/Act%20Chi%20Slo52,%20174.pdf)

Abstract: An ensemble of equilibrium sorption techniques was combined to study the influence of ionic radius on the sorption characteristics of Al3+, Co2+ and Ag+ by fluted pumpkin waste biomass. The experimental results were analyzed in terms of five two-parameter adsorption isotherm equations-the Langmuir, Freundlich, Temkin, Dubinin-Radushkevich and Flory-Huggins isotherms. According to the evaluation using Langmuir equation, the monolayer sorption capacity obtained was 16.98 mg/g, 10.34 mg/g and 8.03 mg/g for Al3+, Co2+ and Ag+ respectively. The data further showed that, the Freundlich and Langmuir isotherms described the data appropriable than Temkin, Dubinin-Radushkevich and Flory-Huggins isotherms. The result showed that fluted pumpkin waste could be used for the removal of Al3+, Co2+ and Ag+ from wastewater and ionic radius influences the rate of metal ion migration to the biomass surface and the adsorption intensity of the metal.

Keywords: Equilibrium Sorption, Flory-Huggins Isotherm, Fluted Pumpkin, Wastewater Treatment, Proces Biotechnology, Removal, Moss, Lead, Copper, Peat, Pith, Ions

? Ansari, R. (2006), Application of polyaniline and its composites for adsorption/recovery of chromium(VI) from aqueous solutions. *Acta Chimica Slovenica*, **53** (1), 88-94.

Full Text: [2006\Act Chi Slo53, 88.pdf](2006/Act%20Chi%20Slo53,%2088.pdf)

Abstract: This paper deals with adsorption of Cr(VI) from aqueous solutions using sawdust coated by polyaniline (SD/PAn) and polyaniline composites with nylon 66 and polyurethane. Nylon and polyurethane are available common polymers that can be easily dissolved in the solvents of PAn (formic acid and NMP). So, the PAn composites with these polymers can be readily prepared via solvent cast method. Polyaniline (PAn) was synthesized chemically and coated on the surface of sawdust (SD) from formic acid via cast method. It was found that polyaniline in the acid doped form (e.g. HCl), can be used for Cr(VI) ion removal in acidic aqueous solutions (pH :5 2). Adsorption occurs only under acidic conditions and it decreases with increasing the pH of solution significantly. The proposed mechanism for adsorption of Cr(VI) with our currently developed adsorbent seems to be mostly occurring via an anion exchange process. Adsorption of Cr(VI) from water using SD/PAn column is both a simple and efficient method compared to the other adsorbents reported by previous investigators.

Keywords: Polyaniline, Composite, Sawdust, Chromium(VI), pH, Adsorption And Desorption, Conducting Polymers, Activated Carbon, Waste-Water, Removal, Cr(VI), Polymerization

? Hamdaoui, O. and Chiha, M. (2007), Removal of Methylene blue from aqueous solutions by wheat bran. *Acta Chimica Slovenica*, **54** (2), 407-418.

Full Text: [2007\Act Chi Slo54, 407.pdf](2007/Act%20Chi%20Slo54,%20407.pdf)

Abstract: In this work, a fundamental investigation on the removal of methylene blue from aqueous solutions by wheat bran is conducted in batch conditions. Removal kinetic data are determined, and the effects of different experimental parameters, such as wheat bran mass, initial concentration of methylene blue, agitation speed, solution pH, particle size, temperature, and ionic strength on the kinetics of methylene blue removal are investigated. The cationic dye recovery increases with an increase of sorbent mass, solution pH, and temperature. Methylene blue removal decreases with an increase of initial concentration, particle size, and ionic strength. The agitation speed showed a limited influence on the removal kinetics. Modeling of kinetic results shows that sorption process is best described by the pseudo- second order model, with determination coefficients higher than 0.996 under all experimental conditions. The applicability of both internal and external diffusion models shows that liquid-film and particle diffusion are effective sorption mechanisms. The activation energy of sorption calculated using the pseudo- second order rate constants is found to be 13.41 kJ mol-1 from an Arrhenius plot. The low value of the activation energy indicates that sorption is an activated and physical process. Thus, wheat bran, a low cost and easily available biomaterial, can be efficiently used as an excellent sorbent for the removal of dyes from wastewater. It can be safely concluded that wheat bran is much economical, effectual, viable, and can be an alternative to more costly adsorbents.

Keywords: Activated Carbon, Activation, Activation Energy, Adsorbent, Adsorbents, Adsorption, Agitation, Agricultural Residues, Aqueous Solutions, Azo-Dye, Batch, Cationic Dye, Concentration, Constants, Cost, Determination, Diffusion, Diffusion Models, Dye, Dyes, Effective, Effects, Energy, Equilibrium, Experimental, External Diffusion, Investigation, Ionic Strength, Kinetic, Kinetics, Kinetics, Low, Mechanisms, Methylene Blue, Model, Models, Orange Peel, Order, Parameters, Particle, Particle Diffusion, Particle Size, pH, Physical, Process, Pseudo Second Order, Rate, Rate Constants, Recovery, Removal, Removal of Dyes, Second Order, Size, Solution Ph, Solutions, Sorbent, Sorption, Sorption, Sorption Mechanisms, Speed, Strength, Temperature, Waste-Water, Wastewater, Wheat, Wheat Bran

? Ramakrishnan, M. and Nagarajan, S. (2009), Utilisation of flame tree waste biomass for the removal of Hg(II) from water. *Acta Chimica Slovenica*, **56** (1), 282-287.

Full Text: [2009\Act Chi Slo56, 282.pdf](2009/Act%20Chi%20Slo56,%20282.pdf)

Abstract: Activated carbon prepared from sulphuric acid treated Flame tree pods’ has been used for the removal of Hg(II) from aqueous solution. Batch mode experiments were conducted to assess the potential for the removal of Hg(II) from water using the above carbon. Adsorption experiments showed that the adsorption process follows the pseudo second order kinetic model and the equilibrium data were fitted well with both Freundlich and Redlich-Peterson isotherm model. About 92% of mercury (II) adsorbed was recovered from the spent carbon using distilled water (pH: 1) and 3% KI solution.

Keywords: Adsorption, Desorption, Fern, Flame Tree Pods, Freundlich Model, Isotherm, Kinetics, Metal-Ions, Pseudo Second Order, Redlich-Peterson Model, Sorption

? Natarajan, B. and Nagarajan, S. (2010), Utilisation of agriculture weed for the removal of Cr(VI) from aqueous solution. *Acta Chimica Slovenica*, **57** (3), 693-699.

Full Text: [2010\Act Chi Slo57, 693.pdf](2010/Act%20Chi%20Slo57,%20693.pdf)

Abstract: The present study investigates the potential use of activated carbon prepared from Cassia tora by sulphuric acid treatment for the removal of Chromium(VI) from aqueous solution. The effects of pH, initial concentration, contact time, and carbon concentration were studied for the sorption of Cr(VI) in batch mode. The optimum pH value for Cr(VI) adsorption was determined as 2.0. The experimental results were fitted with the Freundlich, Langmuir and Redlich Peterson equations to describe the equilibrium isotherms. The Langmuir and Redlich - Peterson isotherm models were found better to describe the experimental data. The maximum adsorption capacity obtained from Langmuir equation was 72.4 mg/g. The kinetic data were then fitted with the Lagergren-first-order, pseudo-second-order and intraparticle models. Further, adsorption kinetics of Cr(VI) was studied and the rate of adsorption was found to confirm pseudo-second-order kinetics with a good correlation and intraparticle diffusion as one of the rate determining steps. Activated carbon developed from Cassia tora can be a potential alternative for Cr(VI) removal from aqueous solution.

Keywords: Acid Treatment, Acid-Treatment, Activated Carbon, Adsorption, Adsorption Capacity, Adsorption Kinetics, Adsorption-Kinetics, Alternative, Aqueous Solution, Batch, Batch Mode, Capacity, Carbon, Cassia Tora, Chromium(VI), Chromium VI, Chromium(VI), Concentration, Correlation, Cr(VI), Cr(VI) Adsorption, Data, Diffusion, Equilibrium, Equilibrium Isotherms, Experimental, Freundlich, Intraparticle Diffusion, Ions, Isotherm, Isotherm, Isotherm Models, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir Equation, Low-Cost Adsorbents, Metal, Mode, Models, Peat, pH, pH Value, Potential, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Redlich-Peterson, Removal, Solution, Sorption, Sulphuric Acid, Treatment, Value, Wastes, Water

? Bajpai, S.K. and Jain, A. (2010), Sorptive removal of crystal violet from aqueous solution using spent tea leaves: Part I optimization of sorption conditions and kinetic studies. *Acta Chimica Slovenica*, **57** (3), 751-757.

Full Text: [2010\Act Chi Slo57, 751.pdf](2010/Act%20Chi%20Slo57,%20751.pdf)

Abstract: The low cost adsorbent, spent tea leaves (STL) has been tested for the effectiveness in decolorization of wastewater containing crystal violet dye in batch experiments. Effect of various parameters such as agitation time, pH, temperature and adsorbent dose has been investigated. The dye uptake has been found to increase with pH and temperature. The kinetic uptake data, obtained at different sorbate concentrations, is best interpreted by pseudo second order model and rate constants for adsorption are found to be 8.5×10-3, 22.2×10-3 and 42.0×10-3 g mg-1 min-1 for initial dye concentrations of 10, 20 and 30 mg L-1 respectively. The dye uptake was found to increase with temperature and the activation energy for adsorption process was found to be 10.45±0.89 kJ mol-1.

Keywords: Activated Carbon, Activation, Activation Energy, Adsorbent, Adsorbent Dose, Adsorption, Agitation, Bagasse-Fly-Ash, Basic Dye, Batch, Batch Experiments, Cationic Dye, Cost, Crystal Violet, Data, Decolorization, Degradation, Dye, Effectiveness, Energy, Equilibrium Isotherm Analyses, Experiments, Kinetic, L1, Langmuir Isotherm, Low Cost, Low Cost Adsorbent, Malachite Green, Methylene-Blue Adsorption, Model, Optimization, Orange-G, pH, Pseudo Second Order, Pseudo-Second-Order, Rate Constants, Removal, Sawdust, Second Order, Second-Order, Sorbate, Sorption, Spent Tea Leaves, Temperature, Uptake, Wastewater

# Title: Acta Chirurgica Academiae Scientiarum Hungaricae

Continued By: Acta chirurgica Hungarica

Full Journal Title: [Acta Chirurgica Academiae Scientiarum Hungaricae](http://locatorplus.gov/cgi-bin/Pwebrecon.cgi?DB=local&v1=1&ti=1,1&Search_Arg=2984283R&Search_Code=0359&CNT=20&SID=1)

ISO Abbreviated Title: Acta Chir. Acad. Sci. Hung.

JCR Abbreviated Title: Acta Chir Acad Sci Hung

ISSN: 0001-5431

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Tóth, J. (1962), Correction of unsuccessful operations for hypospadiasis. *Acta Chirurgica Academiae Scientiarum Hungaricae*, **3** (2-3), 278-286.

? Tóth, I., Pinter, A., Kustos, G., Pap, J., Bohenszky, G. and Szollossy, L. (1962), Uber die experimentelle aorteninsuffizienz. *Acta Chirurgica Academiae Scientiarum Hungaricae*, **3** (4), 383-&.

# Title: Acta Cientifica Venezolana

Full Journal Title: [Acta Cientifica Venezolana](http://www2.scielo.org.ve/scielo.php/script_sci_serial/pid_0001-5504/lng_en/nrm_iso)

ISO Abbreviated Title:

JCR Abbreviated Title: Acta Cient Venez

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Rosabrus, M., Urdaneta, E., Andreu, P. and Noller, H. (1968), Kinetic of elimination reactions: Dynamic method microcatalytic and static determination of heat of adsorption of halogeneted alkanes over MgSO4 and BaSO4. *Acta Cientifica Venezolana*, **19** (1), 61-??.

? Setinek, K. and Beranek, L. (1970), Kinetics and adsorption over acid catalysts. *Acta Cientifica Venezolana*, **21**, 80-??.

Full Text: Act Cie Ven21, 80.pdf

? Mendioro, S. and Tezanos, E.H. (1973), Ammonia adsorption on acid catalysts. 1. Kinetic studies. *Acta Cientifica Venezolana*, **24**, 180-185.

# Title: Acta Cirúrgica Brasileira

Full Journal Title: [Acta Cirúrgica Brasileira](http://www.scielo.br/scielo.php?script=sci_serial&pid=0102-8650&lng=en&nrm=iso)

ISO Abbreviated Title:

JCR Abbreviated Title: Acta Cir Bras

ISSN: 0102-8650

Issues/Year:

Journal Country/Territory: Brazil

Language: Portuguese

Publisher: Sociedade Brasileira Para O Desenvolvimento Da Pesquisa Em Cirurgia Curso De Pos-Graduacao Em Tecnica Operatoria E Cirurgia Experimental Escola Paulista De Medicina

Publisher Address:

Subject Categories:

Surgery: Impact Factor

Amorim, K.P.C., Alves, M.D.S.C.F. and Germano, R.M. (2005), Construction of knowledge in odontology: The scientific production in debate. *Acta Cirúrgica Brasileira*, **20** (Suppl 1), 12-15.

Full text: [2005\Act Cir Bra20, 12.pdf](2005/Act%20Cir%20Bra20,%2012.pdf)

Abstract: PURPOSE: Analyze, quantitatively, which odontology magazines are being consulted and read by surgeon-dentists, and evaluate the profiles of the mostly cited. METHODS: 370 polls were made, during the XVII Congresso Pernambucano de Odontologia (Pernambucan Congress of Odontology) and the IX Congresso de Odontologia do Rio Grande do Norte (Congress of Odontology of Rio Grande do Norte), which took place, respectively, in April and September 2004. The participants were volunteering professionals divided among General Practice (37.84%) and ten differing specialties (62.16%); of which 77.02% had up to ten years of graduation. RESULTS: Resulting the researches made, 620 quotes were generated, in which, 35 different magazines, national and international, were quoted. By analyzing the data collected, we observe that three magazines summed more than half of the quota (52.74%), which are: Revista da Associacao Paulista de Cirurgioes Dentistas-APCP (Magazine of the Paulista Association of Surgeon-Dentists), Revista da Associacao Brasileira de Odontologia - ABO national (Magazine of the Brazilian Association of Odontology) and the Revista Brasileira de Odontologia-RBO (Brazilian Magazine of Odontology). CONCLUSION: Despite the participants of the research being, in their majority, specialists, we observe a tendency of a greater consultation of the magazines of general characteristic. These magazines predominantly tackle clinical and technical subjects and present an expressive circulation, great penetration in the odontologic world, easy accessibility and a long time in the market (two of them are over 50 years-old). According to CAPES - QUALIS, all possess a B national concept. Therefore, it is necessary a deepening of this study, so as to analyze qualitatively what kind of subjects and themes these magazines touch, since they influence the odontologic formation and practice.

Keywords: Clinical, Consultation, Data, General, International, Knowledge, Market, Methods, Practice, Profiles, Purpose, Research, Rio Grande, Scientific Production, World

# Title: Acta Clinica Belgica

Full Journal Title: Acta Clinica Belgica

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hamen, J. and Wennig, R. (1999), Diagnosis of an acute parathion-intoxication and forensic consequences. *Acta Clinica Belgica*, **S1**, 54-58.

Full Text: 1999\Act Cli BelS1, 54.pdf

Abstract: During a toxicological screening of a 16-year-old girl, in a clinical toxicological case, a parathion-intoxication has been detected. GC/MS revealed the presence of ethyl parathion in the gastric content and p-nitrophenol in urine. p-Nitrophenol is a major metabolite of ethyl-parathion, A serum concentration of 0.07mg/L of ethyl parathion was measured by GC/MS-SIM. During hospitalisation the severity of parathion intoxication was monitored by measurement of pseudo-cholinesterase activities in serum. The young girl recovered well of her intoxication after a few days, without any apparent sequellae. A preliminary inquiry revealed that the adolescent had consumed a bowl of soup at the home of a 67-year-old female neighbour, who died the same day. Her corpse was found at her home. The certificate of death, written by the doctor in charge, attested a heart failure. Due to the results of the toxicological analyses from the kid, the juridical authorities ordered an autopsy of the corpse of the lady. Ethyl parathion was found in the gastric content and p-nitrophenol in urine. Even after several temptations it has not been possible to detect ethyl parathion neither in blood nor in some organs. But it was possible to detect traces of p-nitrophenol her blood.

Keywords: Activities, Acute, Adolescent, Blood, Diagnosis, Measurement, P-Nitrophenol, Screening, Severity, Urine

? Devroey, D. and Betz, W. (2003), An analysis of first authorisations for lipid-lowering drugs in Belgium. *Acta Clinica Belgica*, **58** (3), 152-158.

Full Text: [2003\Act Cli Bel58, 152.pdf](2003/Act%20Cli%20Bel58,%20152.pdf)

Abstract: Introduction: In Belgium lipid-lowering drugs are reimbursed in primary and secondary prevention when after a non-specified diet of at least three months total cholesterol (TC) remains higher than 250 mg/dl or triglycerides (TG) remain higher than 200 mg/dl. Low-density lipoprotein cholesterol (LDL-C) is only taken into account for the reimbursement of fibrates when it remains higher than 160 mg/dl in secondary prevention. The aim of this study was to evaluate the changes in fasting lipoproteins levels among patients who wait for the reimbursement of a lipid-lowering drug. Additionally, the parameters influencing the physicians’ choice to prescribe a statin or a fibrate were analysed. Methods: In total 286 first authorisations for the reimbursement of lipid-lowering drugs were recorded during February and March of 2002 at two regional health insurance offices. We studied a mixed primary and secondary prevention population. Results: The mean age at the initiation of the treatment was 61 years (SD=12). Mean fasting TC was 285 mg/dl before the diet and 286 mg/dl after the diet. Fasting TC and TG did not decrease with the diet for respectively 51% and 54% of the patients. High TC and an improvement of TG during the diet were the only two factors correlated with the prescription of a statin instead of a fibrate. Conclusions: Half of the patients receiving lipid-lowering drugs in Belgium were not able to decrease their TC with diet before the initiation of the treatment. Cardiovascular risk factors were not taken into account for the reimbursement of statins. Belgian reimbursement criteria should be adapted.

Keywords: Belgium, Cholesterol, Cholesterol, Coronary-Heart-Disease, Diet, Drug Therapy, Hyperlipidemia, Prevention, Program, Treatment, Treatment Guidelines

# Title: Acta Crystallographica Section A

Full Journal Title: [Acta Crystallographica Section A](http://journals.iucr.org/a/contents/backissues.html); [Acta Crystallographica Section A](http://www.blackwell-synergy.com/loi/aya); [Acta Crystallographica Section A](http://journals.iucr.org/a/journalhomepage.html)

ISO Abbreviated Title: Acta crystallogr. Sect. A

JCR Abbreviated Title: Acta Crystallogr A

ISSN: 0108-7673

Issues/Year: 6

Journal Country/Territory: Denmark

Language: Multi-Language

Publisher: Blackwell Munksgaard

Publisher Address: 35 Norre Sogade, PO Box 2148, DK-1016 Copenhagen, Denmark

Subject Categories:

Crystallography: Impact Factor 1.417, /

Hawkins, D.T. (1980), Crystallographic literature: A bibliometric and citation analysis. *Acta Crystallographica Section A*, **36** (3), 475-482.

Full Text: [1960-80\Act Cry Sec A36, 475.pdf](1960-80/Act%20Cry%20Sec%20A36,%20475.pdf)

Abstract: Citation analysis has been widely used to quantify the influence of research articles on the development of science. This paper reports a citation analysis of ten highly cited papers associated with the Cambridge Crystallographic Data Centre (CCDC), covering the variation of citation with time, the journals in which citations occur, and the types of organization and the geographic regions that use the Cambridge Structural Database. The ten most highly cited papers, comprising four database descriptions (CSD), two geometrical tabulations (TAB) and four basic research papers (RES), received a total of 8494 citations over the period 1981-1998, with more than half of these citations occurring in the literature published from 1995 onwards. The high citation rates of the database descriptions (3573 of 8494) indicate the value of crystallographic data. However, the large number of citations of the geometrical tables (3172) and the research papers (1767) indicate that this value resides not just in the raw data held in the Cambridge Structural Database, but also in the structural knowledge that can be derived from it. In the most recent years covered by the analysis (1995-1998), these ten CCDC publications have received more than 1000 citations per annum (CSD 507, TAB 398 and RES 153 citations per annum) and the detailed analysis shows that these papers, and the data that they discuss, are used not only by crystallographers but also by researchers across the entire range of the chemical sciences.

Keywords: Citation Analysis, Information Science, Cambridge Crystallographic Data Centre, Cambridge Structural Database

# Title: Acta Crystallographica Section B-Structural Science

Full Journal Title: [Acta Crystallographica Section B-Structural Science](http://scripts.iucr.org/)

ISO Abbreviated Title: Acta crystallogr. Sect. B

JCR Abbreviated Title: Acta Crystallogr B

ISSN: 0108-7681

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Behrens, H. and Luksch, P. (2006), A bibliometric study in crystallography. *Acta Crystallographica Section B-Structural Science*, **62**, 993-1001.

Full Text: [2006\Act Cry Sec B62, 993.pdf](2006/Act%20Cry%20Sec%20B62,%20993.pdf)

Abstract: This is an application of the mathematical and statistical techniques of bibliometrics to the field of crystallography. This study is, however, restricted to inorganic compounds. The data were taken from the Inorganic Crystal Structure Database, which is a well defined and evaluated body of literature and data published from 1913 to date. The data were loaded in a relational database system, which allows a widespread analysis. The following results were obtained: The cumulative growth rate of the number of experimentally determined crystal structures is best described by a third-degree polynomial function. Except for the upper end of the curve, Bradford’s plot can be described well by the analytical Leimkuhler function. The publication process is dominated by a small number of periodicals. The probability of the author productivity in terms of publications follows an inverse power law of the Lotka form and in terms of database entries an inverse power law in the Mandelbrot form. In both cases the exponent is about 1.7. For the lower tail of the data an exponential correction factor has to be applied. Multiple authorship has increased from 1.4 authors per publication to about four within the past eight decades. The author distribution itself is represented by a lognormal distribution.

Keywords: Analysis, Bibliometric Study, Bibliometrics, Citation Analysis, Crystal-Structure Database, Distribution, Function, Growth, Growth Rate, ICSD, Inorganic, Law, Laws, Periodicals, Probability, Process, Productivity, Publication, Publications, Techniques, Upper

# Title: Acta Crystallographica Section C-Crystal Structure Communications

Full Journal Title: [Acta Crystallographica Section C-Crystal Structure Communications](http://scripts.iucr.org/)

ISO Abbreviated Title: Acta Crystallogr. Sect. C-Cryst. Struct. Commun.

JCR Abbreviated Title: Acta Crystallogr C

ISSN: 0108-2701

Issues/Year: 12

Journal Country/Territory: Denmark

Language: Multi-Language

Publisher: Munksgaard Int Publ Ltd

Publisher Address: 35 Norre Sogade, PO Box 2148, DK-1016 Copenhagen, Denmark

Subject Categories:

Crystallography: Impact Factor

Adembri, G., Celli, A.M., Donati, D., Scotton, M. and Sega, A. (1987), Structure of (1rs, 4rs, 7rs)-1,4,7-trihydroxy-1,4,7-trimethyl-6,7-dihydrocyclopenta-[d][1,2]dioxin-5-one. *Acta Crystallographica Section C-Crystal Structure Communications*, **43** (1), 69-71.

Full Text: [1987\Act Cry Sec C43, 69.pdf](1987/Act%20Cry%20Sec%20C43,%2069.pdf)

Rissanen, K., Valkonen, J. and Tarhanen, J. (1987), 1,2,3,4-tetrachlorodibenzo-*p-dioxin*. *Acta Crystallographica Section C-Crystal Structure Communications*, **43** (3), 488-490.

Full Text: [1987\Act Cry Sec C43, 488.pdf](1987/Act%20Cry%20Sec%20C43,%20488.pdf)

Hamada, K., Kiriyama, H., Tsuji, H. and Hashimoto, M. (1987), Structures of 1,4-bis(trichloromethyl)benzene(I)and 6-nitro-2,4-bis(trichloromethyl)-benzo-1,3-dioxin(II). *Acta Crystallographica Section C-Crystal Structure Communications*, **43** (5), 953-956.

Full Text: [1987\Act Cry Sec C43, 953.pdf](1987/Act%20Cry%20Sec%20C43,%20953.pdf)

# Title: Acta Dermato-Venereologica

Full Journal Title: [Acta Dermato-Venereologica](http://www.medicaljournals.se/acta/content/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Haslund, P., Lee, R.A. and Jemec, G.B.E. (2009), Treatment of hidradenitis suppurativa with tumour necrosis factor-alpha inhibitors. *Acta Dermato-Venereologica*, **89** (6), 595-600.

Full Text: [2009\Act Der-Ven89, 595.pdf](2009/Act%20Der-Ven89,%20595.pdf)

Abstract: Hidradenitis suppurativa (HS) is a common inflammatory skin disease. Medical treatment is often disappointing and in severe disease surgery remains the therapy of choice. Extensive surgery may be effective but also mutilating. Patients experience a significant reduction in quality of life and the need for new treatment modalities are urgent. In recent years patients with HS have been treated off-label with tumour necrosis factor-alpha (TNF-alpha) inhibitors with a varying degrees of effect. We performed a systematic review of papers retrieved from two databases (PubMed and Web of Science) using the following keywords: hidradenitis suppurativa, acne inversa, infliximab, etanercept, and adalimumab. A total of 34 publications were retrieved, describing treatment of 105 patients. Most cases report treatment with infliximab (52/105). A positive treatment outcome was reported in 90/105 cases, with only 7/105 non-responders and 8/105 patients experiencing side-effects. The side-effects were comparable to those seen in other TNF-alpha inhibitor studies. In the majority of cases the treatment was effective when given as a suppressive therapy, but 15/105 cases were described with long-term remission (>= 3 months) after the end of therapy. In most publications follow-up was, however, insufficient to allow a systematic exploration of this. TNF-alpha inhibitors seem to be effective in the treatment of HS. However, several questions remain to be answered through specific studies. This review has also identified a need for more standardized reporting of the outcomes as well as randomized controlled trials in this disease.

Keywords: Acne Inversa, Adalimumab, Clindamycin, Crohns-Disease, Databases, Disease, Etanercept, Etanercept: Adalimumab, Follow-up, Hidradenitis Suppurativa, Infliximab, Infliximab, Long-Term Efficacy, Management, Outcome, Outcomes, Papers, Patient, Publications, Pubmed, Quality of Life, Randomized Controlled Trials, Remission, Review, Science, Surgery, Systematic, Systematic Review, Therapy, Treatment, Treatment Outcome, Tumour Necrosis Factor-Alpha Inhibitors, Web of Science

? Enery-Stonelake, M. and Bernhard, J. (2011), The bibliometrics of Itch. *Acta Dermato-Venereologica*, **91** (5), 621.

Full Text: [2011\Act Der-Ven91, 621.pdf](2011/Act%20Der-Ven91,%20621.pdf)

Keywords: Bibliometrics

# Title: Acta Endocrinologica

Full Journal Title: Acta Endocrinologica

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Binder, C. (1990), Self-plagiarism and multiple publications - Negligence or epidemic disease. *Acta Endocrinologica*, **122** (1), 7.

Full Text: 1990\Act End122, 7.pdf

Keywords: Publications

# Title: Acta Geographica Slovenica-Geografski Zbornik

Full Journal Title: Acta Geographica Slovenica-Geografski Zbornik

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1581-6613

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zorn, M. and Komac, B. (2010), The history of *Acta Geographica Slovenica*. *Acta Geographica Slovenica-Geografski Zbornik*, **50** (1), 8-25.

Full Text: [2010\Act Geo Slo50, 8.pdf](2010/Act%20Geo%20Slo50,%208.pdf)

Abstract: Acta geographica Slovenica is a research journal for geography and related disciplines published by the Anton Melik Geographical Institute of Scientific Research Centre of the Slovenian Academy of Sciences and Arts. It has been published since 1952 and is the second-oldest Slovenian geographical journal. Volume 50 was published in 2010, and this article is dedicated to this special anniversary. The journal was only published occasionally until 1976, when the volume 14 appeared, but afterwards it began to be published annually, with two volumes a year since 2003 (volume 43). With volume 43, the journal was included in Science Citation Index Expanded (SCIE). Since 2010, it has also had an impact factor. For 2009, this factor was 0.714, which ranks the journal in third place among all indexed Slovenian journals. In all the volumes, a total of 273 research articles have been published on more than 12,000 pages; half of these articles were written by the institute members.

Keywords: Acta Geographica Slovenica, Anton Melik Geographical Institute, Geography, History, Impact, Impact Factor, Journal, Journals, Research, Science Citation Index, Scientific Research Centre of The Slovenian Academy of Sciences and Arts, Slovenia, Volume

# Title: Acta Geologica Sinica-English Edition

Full Journal Title: [Acta Geologica Sinica-English Edition](http://vip.calis.edu.cn/CSTJ/sear.dll?SearchURL?sid=&genre=&issn=1000-9515&year=&volume=&issue=&spage=&atitle=&pid=)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1000-9515

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Wu, D.Q., Diao, G.Y., Yuan, P. and Peng, J.L. (2006), Adsorption of pentachlorophenol onto oxide and clay minerals: Surface reaction model and environmental implications. *Acta Geologica Sinica-English Edition*, **80** (2), 192-199.

Full Text: [2006\Act Geo Sin80, 192.pdf](2006/Act%20Geo%20Sin80,%20192.pdf)

Abstract: The adsorption of pentachlorophenol (PCP) onto quartz, kaolinite, illite, montmorillonite and iron oxides has been investigated by batch equilibrium techniques. The pH-dependent isotherms are curves with peak values, the position of which is at about pH = 5-6 depending on the mineral species. Based on distribution of both speciation of surface hydroxyls on minerals and PCP in solution a surface reaction model involving surface complexation and surface electrostatic attraction is presented to fit the pH-dependent isotherms, and both reaction constants are calculated. The results show that on quartz and phyllosilicate minerals the predominant adsorption reaction is surface complexation, meanwhile both of surface electrostatic attraction and surface complexation are involved on the iron oxide minerals. The reaction constants of surface electrostatic adsorption are usually one to three orders in magnitude, larger than that of surface complexation. The concentration-dependent isotherms can be well fitted by Langmuir equation with the correlation coefficient R > 0.93 for kaolinite and iron oxides. The maximum adsorption is found in the order: hematite > lepidocrocite > goethite > kaolinite > quartz > montmorillonite = illite, which can be interpreted by consideration of both reaction mechanism and surface hydroxyl density. The significant adsorption of PCP onto mineral surfaces suggests that clay and iron oxide minerals will play an important role as HIOCs are adsorbed in laterite or latertoid soil, which is widespread in South China.

Keywords: 2,4-D, Adsorption, Desorption, Dissolution, Equilibrium, Goethite, Illite, Iron Oxides, Isotherms, Kaolinite, Kaolinite, Langmuir, Laterite, Montmorillonite, Organic-Compounds, Pentachlorophenol (PCP), Quartz, Soil, Sorption, Surface Reaction Model, Water

? Peng, S.C., Wang, S.H., Chen, T.H., Jiang, S.T. and Huang, C.H. (2006), Adsorption kinetics of methylene blue from aqueous solutions onto palygorskite. *Acta Geologica Sinica-English Edition*, **80** (2), 236-242.

Full Text: [2006\Act Geo Sin80, 236.pdf](2006/Act%20Geo%20Sin80,%20236.pdf)

Abstract: The adsorption kinetics of methylene blue from aqueous solutions on purified palygorskite was investigated. The kinetics data related to the adsorption of methylene blue from aqueous solutions are in good agreement with the pseudo-second order equation in ranges of initial concentration of 120-210 mg/L, oscillation speed of 100-200 r/min and temperature of 298-328K. The experimental results show that methylene blue is only adsorbed onto the external surface of purified palygorskite, and the apparent adsorption activation energy is 13.92 kJ/mol. The relatively low apparent adsorption activation energy suggests that the adsorption of methylene blue involves in not only a chemical, but also a physical adsorption process, and it is controlled by the combination of chemical adsorption and liquid-film diffusion.

Keywords: Purified Palygorskite, Adsorption, Methylene Blue, Kinetics, Polluted Soils, Sorption, Smectite

# Title: Acta Geophysica

Full Journal Title: Acta Geophysica

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Aniszewski, A. (2011), Particular application of a mathematical transport model incorporating sub-surface reactive pollutants. *Acta Geophysica*, **59** (1), 110-123.

Full Text: [2011\Act Geo59, 110.pdf](2011/Act%20Geo59,%20110.pdf)

Abstract: In the first part of the paper, a 2D transport equation was used, which takes into consideration only the non-linear adsorption term described by means of non-linear Freundlich isotherm. The equation of this type was the basis of numerical calculations of concentration for chosen indicators (nitrates and biochemical oxygen demand). In the second part, the presented equation took into consideration not only the nonlinear adsorption term, but also the term of biodegradation (biological denitrification), described by the first-order microbial reaction, most often applied in practice. Numerical calculations in the first and second parts of the paper were carried out using the same numerical scheme and the author’s program PCCS-2, presented in Aniszewski (2009) and compared afterwards with the measured concentration values. The calculation results made it possible to define the reduction degree of concentration reduction for the chosen chemicals as a result of reversible sorption and biodegradation processes.

Keywords: Adsorption, Adsorption, Advection, Aquifer, Aquifers, Biodegradation, Biodegradation, Bod Indicator, Contaminant Transport, Dispersion, Freundlich, Freundlich Isotherm, Indicators, Isotherm, Model, Nitrate, Nitrates, Pollutants, Processes, Reduction, Sorption, Water

# Title: Acta Histochemica et Cytochemica

Full Journal Title: Acta Histochemica et Cytochemica

ISO Abbreviated Title: Acta Histochem. Cytochem.

JCR Abbreviated Title: Acta Histochem Cytochem

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hiraoka, T. (1975), Feulgen nucleal reaction. 3. Contribution to study of adsorption-isotherm and stoichiometry of feulgens nucleal reaction insitu. *Acta Histochemica et Cytochemica*, **8** (4), 342-349.

# Title: Acta Histochemica et Cytochemica: Official Journal of the Japan Society of Histochemistry and Cytochemistry

Full Journal Title: [Acta Histochemica et Cytochemica](http://ahc.jstage.jst.go.jp/en/)

ISO Abbreviated Title: Acta Histochem. Cytochem.

JCR Abbreviated Title: Acta Histochem Cytoc

ISSN: 0044-5991

Issues/Year: 6

Journal Country/Territory: Japan

Language: Multi-Language

Publisher: Japan Soc Histochem Cytochem

Publisher Address: Nakanishi Printing Co Shimotachiuri-Ogawa Kamikyoku, Kyoto 602, Japan

Subject Categories:

Cell Biology: Impact Factor

? Ojika, T., Imaizumi, M., Watanabe, H., Sakakibara, M., Abe, T. and Kato, K. (1991), Immunochemical and immunohistochemical studies on manganese and copper-zinc superoxide dismutases in human lung-cancer. *Acta Histochemica et Cytochemica: Official Journal of the Japan Society of Histochemistry and Cytochemistry*, **24** (5), 489-495.

Abstract: We made a study on the localization of manganese superoxide dismutase (Mn SOD) and copper-zinc superoxide dismutase (Cu-Zn SOD) in normal lung tissue and lung cancer by immunohistochemical study and quantitative analysis by enzyme immunoassay. In normal lung tissue, both SODs were localized mainly in the bronchiolar epithelial cells. In lung cancer, both SODs were stained intensely in the cytoplasm of cancer cells. Mn SOD and Cu-Zn SOD were immunohistochemically demonstrated in 87% (40 of 46) and 93% (43 of 46) of cases of lung cancer, respectively. The concentrations of Mn SOD and Cu-Zn SOD in tissue of lung cancer (n = 73) were significantly higher than those in normal lung tissue (n = 26), regardless of the histological type (p < 0.01). The Mn SOD contents in non-small cell lung cancer were significantly higher than those in small cell lung cancer. In the sera (n = 62) of patients with lung cancer, neither of the SODs was indicated as a useful tumor marker for lung cancer. This indicates that lung cancer tissues have increased levels of Mn SOD and Cu-Zn SOD.

Keywords: Sensitive Enzyme-Immunoassay, Human-Tissues, Monoclonal-Antibody, Cell-Lines, Glutathione, Tumors

# Title: Acta Hydrochimica et Hydrobiologica

Acta Hydrochimica et Hydrobiologica changed to Clean-Soil Air Water

Full Journal Title: [Acta Hydrochimica et Hydrobiologica](http://www3.interscience.wiley.com/cgi-bin/jtoc?ID=5007772)

ISO Abbreviated Title: Acta Hydrochim. Hydrobiol.

JCR Abbreviated Title: Acta Hydroch Hydrob

ISSN: 0323-4320

Issues/Year: 6

Journal Country/Territory: Germany

Language: Multi-Language

Publisher: Wiley-V C H Verlag Gmbh

Publisher Address: PO BOX 10 11 61, D-69451 Berlin, Germany

Subject Categories:

Environmental Sciences: Impact Factor 0.757, 66/127 (2000)

Marine & Freshwater Biology: Impact Factor 0.757 (2000)

Water Resources: Impact Factor 0.757, 13/47 (2000)

? Sosath, F. and Libra, J.A. (1997), Purification of wastewaters containing azo dyes. *Acta Hydrochimica et Hydrobiologica*, **25** (5), 259-264.

Abstract: This study describes the degradability of the azo dye C.I. Reactive Violet 5 by a continuous flow biological treatment system consisting of three rotating disc reactors. The azo dye was first decolorized in an anaerobic reactor. Decolorization was improved by adding an auxiliary substrate (yeast extract and acetic acid). Although severe operating conditions were experienced due to failures in the temperature and pH-controllers, the reactor recovered quickly and continued to decolorize reliably. The removal of the auxiliary substrate in the anaerobic reactor was not satisfactory, probably due to the copper in the azo dye. Batch experiments showed that copper was removed from the dye molecule and precipitated during the decolorization. In the continuous now reactor, the copper precipitate on the disc can redissolve due to a pH-gradient in the fixed biomass becoming toxic again for the bacteria. In the following two aerobic reactors, the auxiliary substrate was degraded, but mineralization of the dye metabolites was insufficient. The aromatic amines produced by the anaerobic decolorization are more toxic in the bacterial luminescence test than the azo dye. Therefore, decolorization alone cannot be used to treat colored wastewater. Since the amines can also be produced in anaerobic parts of rivers, the dyes have to be removed in a more efficient way. That is the reason why in further experiments ozonation is being tested to increase the biological degradability of the azo dye for a following aerobic stage. Either ozonation can be used after the two stage treatment of the dye in anaerobic/aerobic reactors or the dye can be oxidized directly, making the addition of auxiliary substrate unnecessary. These configurations are being tested with the goal to degrade the dye with the least ozone consumption.

Keywords: Textile Wastewater, Azo Dye, Biological Treatment, Rotating Disc Reactor, Decolorization

? Karcher, S., Kornmuller, A. and Jekel, M. (1999), Effects of alkali and alkaline-earth cations on the removal of reactive dyes with cucurbituril. *Acta Hydrochimica et Hydrobiologica*, **27** (1), 38-42.

Full Teat: Act Hyd Hyd27, 38.pdf

Abstract: The sorption of reactive (textile) dyes onto cucurbituril, a cyclic polymer with hydrophobic cavity, was studied. Dye sorption is strongly enhanced by Ca2+ or Sr2+ concentrations up to 100 mmol/L for all studied dyes. Mg2+ and alkaline ions had similar effects for only one dye (Reactive Red 120), and only at higher concentrations. Concentrations above 100 mmol/L - depending on cation and dye - dissolve cucurbituril and prevent dye removal. As shown in previous studies by our group loadings obtained under suitable conditions (calcium concentration between 2 and 100 mmol/L. total salt concentration not exceeding 100 mmol/L) are 1 to 1.7 mol/mol or 0.9 to 1.8 g/g. The chemical mechanism responsible for the ionic influences is still under investigation. Generally, cucurbituril is a potent sorbent for reactive dyes. However, the technical application is still limited by the lack of a support material that would allow use in fixed bed filters.

Keywords: Cation Complexation, Cucurbituril, Dye, Dye Removal, Dye Sorption, Dyes, Fixed-Bed, Ion, Mechanism, Polymer, Reactive Dyes, Removal, Sorption, Textile Dyes, Textile Wastewater

Akçay, G. and Yurdakoç, K. (2000), Removal of various phenoxyalkanoic acid herbicides from water by organo-clays. *Acta Hydrochimica et Hydrobiologica*, **28** (6), 300-304.

Full Teat: [2000\Act Hyd Hyd28, 300.pdf](2000/Act%20Hyd%20Hyd28,%20300.pdf)

Abstract: Dodecylammonium bentonite (DB) and dodecylammonium sepiolite (DS) were used as sorbents for phenoxyalkanoic acid herbicides 2,4-d((2,4-dichlorophenoxy)acetic acid), 2,4-dP ((RS)-2-(2,4-dichlorophenoxy)propionic acid), 2,4-dB(4-(2,4-dichlorophenoxy)butyric acid), 2,4,5-T((2,4,5-trichlorophenoxy)acetic acid), and MCPA ((4-chloro-2-methylphenoxy)acetic acid). Langmuir, Freundlich, and the linear Henry’s Law isotherm adsorption parameters were calculated from the adsorption isotherms. Langmuir equation showed poor fit for both adsorbents. According to the evaluation using the Freundlich equation, the DS sample showed much higher and stronger sorption capacity than DB. Similar behaviour was also observed in the case of the linear Henry’s Law isotherm. The adsorption of the herbicides on both DB and DS decreased in the order of 2,4-dB > 2, 4, 5-T > 2,4-dP > 2,4-d > MCPA.

Keywords: Adsorption, Phenoxyalkanoic Acids, Herbicides, Bentonite, Sepiolite, Organo-Clay, 2,4-D, Soil

Ong, S.A., Toorisaka, E., Hirata, M. and Hano, T. (2005), The behavior of Ni(II), Cr(III), and Zn(II) in biological wastewater treatment process. *Acta Hydrochimica et Hydrobiologica*, **33** (2), 95-103.

Full Teat: [2005\Act Hyd Hyd33, 95.pdf](2005/Act%20Hyd%20Hyd33,%2095.pdf)

Abstract: The purpose of this research was to investigate the effects of Ni(II), Cr(III), and Zn(II) on the treatment performance of sequencing batch reactor (SBR) system. The kinetics of adsorption study showed that the pseudo second-order reaction model provided the best description of the data obtained. From the Langmuir isotherm, the maximum adsorption capacities of Ni(II), Cr(III), and Zn(II) were 30 mg/g, 23 mg/g, and 18 mg/g, respectively. Cr(III) and Ni(II) were found to exert a more pronounced inhibitory effect on the bioactivity of the microorganisms compare to Zn(II). The increase of Cr(III) and Ni(II) concentration from 5 to 10 mg/L caused significant effect on the suspended solids (SS) and total organic carbon (TOC) removal efficiency in SBR system but vice versa in the case of Zn(II). The addition of powdered activated carbon (PAC) and termination of metal ions addition into SBR systems were carried out to investigate the capability of system recovery from the toxic effects of metal.

Keywords: Activated Carbon, Activated Sludge, Activated-Sludge Process, Adsorption, Bacterial Extracellular Polymers, Batch Reactor, Behavior, Bioactivity, Carbon, Chromium(VI), Cr(III), Efficiency, Effluents, Heavy Metal, Heavy-Metals, Inhibitory Effect, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Metal, Metal Ions, Microorganisms, Model, Ni(II), PAC, Powdered Activated Carbon, Pseudo Second-Order, Pseudo-Second-Order, Recovery, Removal, Removal Efficiency, Research, Second-Order, Sequencing Batch Reactor, Sorption, Treatment, Wastewater, Wastewater Treatment, Zn(II)

# Title: Acta Mechanica

Full Journal Title: Acta Mechanica

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0001-5970

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Scandinavian University Press, Oslo

Publisher Address:

Subject Categories:

: Impact Factor

? Ng, C.O. and Bai, Y.C. (2005), Dispersion in oscillatory Couette flow with sorptive boundaries. *Acta Mechanica*, **178** (1-2), 65-84.

Abstract: A multiple-scale method of averaging is applied to the study of dispersion in oscillatory Couette flow where the solute may undergo reversible sorptive phase exchange with the boundary walls. On assuming that the oscillation period and the sorption reaction time are comparable with the transverse diffusion time, which is much shorter than the axial transport time scales, an effective advection-dispersion transport equation in terms of the mean concentration is deduced at the second order. Analytical expressions are obtained for the two dispersion coefficients due to the steady and oscillating components of the Couette flow, incorporating the coupling effects between the flow oscillation, sorption kinetics, and the retardation due to phase partitioning.

Keywords: Longitudinal Dispersion, Contaminant Dispersion, Shear Dispersion, Pulsatile Flow, Solute, Absorption, Channel, Tube, Exchange, Diffusion

# Title: Acta Medica Croatica

Full Journal Title: Acta Medica Croatica

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Scandinavian University Press, Oslo

Publisher Address:

Subject Categories:

: Impact Factor

? Silobrcic, V. (2004), Relative scales and their possible use in evaluation of scientific research in a small scientific community. *Acta Medica Croatica*, **58** (3), 173-176.

Abstract: The most appropriate way of evaluating the quality of scientific research is peer review by competent and objective colleagues. An objective review, however, is practically impossible within a small scientific community like the Croatian one, and the only solution in this case is internationalization of the process. In order to upgrade the objectivity of the evaluation, bibliometric/scientiometric indicators can be used, provided they are interpreted by experts in the field. The author believes that relative scales based on these indicators are of particular relevance for such small scientific communities. They enable determination of relative positions of a scientist, or a group of scientists, within a given scientific discipline, and for a given indicator, both at the international and/or national level. Such relative positions can often serve better for more objective evaluation than absolute values of the same indicators. An example of relative scales and their use is presented.

# Title: Acta Médica Portuguesa

Full Journal Title: [Acta Medica Portuguesa](http://www.actamedicaportuguesa.com/)

ISO Abbreviated Title:

JCR Abbreviated Title: Acta Med Port

ISSN: 0870-399X (Print), 1646-0758 (Electronic)

Issues/Year:

Journal Country/Territory: Portugal

Language: English, Portuguese

Publisher: Centro Editor Livreiro da Ordem dos Médicos

Publisher Address:

Subject Categories:

: Impact Factor

? Donato, H.M. and De Oliveira, C.F. (2006), Breast pathology: Evaluation of the Portuguese scientific activity based on bibliometric indicators. *Acta Médica Portuguesa*, **19** (3), 225-234.

Full Text: [2006\Act Méd Por19, 225.pdf](2006/Act%20Méd%20Por19,%20225.pdf)

Abstract: Introduction and objectives: The bibliometric analysis of the portuguese scientific production in the field of breast pathology since 1995 to date (July 2005) Provides an overview on the developed scientific activity on this subject and allows the characterisation of some relevant features as well as its evolution along the studied period. Material and methods: Documents collected, reflecting the national scientific production in the field of breast pathology between 1995 and July 2005 in 3 databases, medline (With search interface pubmed), Science citation index and index of the portuguese medical journals were studied. We applied quantitative and qualitative bibliometric indicators to the found number of articles and the journals where they were published. The quantitative indicators based on the number of published articles illustrate portugal’s position in the area of breast pathology within the international scientific community; Further, it also allows the identification of the participation of the different institutions and national bodies, allocated by geographic areas, in scientific production as well as the establishment of international collaboration. Qualitative indicators were used to investigate the influence, and the impact of the scientific production. These are indicators based on the journal classification where the articles were published and also the citations they received. The number of citations obtained by the articles collected in the performed search, was determined, based on the science citation index and the impact factor (If) of the journals, which is annually published in the journal citation reports (JCR). In spite of all its constraints, it is difficult not to accept the opinion that the impact factor is today one of the few means (If not the sole one) Which enables an assessment of the influence of a journal in the international scientific community. Results: During the evaluated period, the portuguese scientific production in the selected area showed an increase of 200%. We analysed 348 documents (232 Published in the selected international databases and 16 in the national database. We noticed that articles published by one single author are very rare, n=6 and that co-authorship is the most common way of publishing. The distribution of article production is as follows: 59% In the north zone, 26% in the south zone and 15% in the central zone of the country. The national institutions with a higher rate of publishing in renowned international journals are ipatimup, ipo porto and ipo lisboa. The institutions which publish the larger number of papers in portuguese journals are hospitals and health centres. The international journals selected by the national scientists present a high impact factor. In the whole of the 232 articles selected in the international databases, 81 have not received any citation and 120 obtained a total of 1.856 Citations. It should be noted that the more recent articles have not yet received citations. The articles resulting from international collaboration, were those receiving an higher rate of citations. Conclusions: An increase of the investigation in breast pathology is observed, this being illustrated by the increase in the number of articles published in well-recognized international journals. It is also noticed a trend to publish in journals with a higher impact factor as well as an increasing role of co-authorship and international collaboration.

Keywords: Analysis, Assessment, Bibliometric, Bibliometric Analysis, Bibliometric Indicators, Bodies, Citation, Citations, Classification, Co-Authorship, Coauthorship, Collaboration, Community, Country, Database, Databases, Distribution, Evaluation, Evolution, Field, Health, Hospitals, Identification, Impact, Impact Factor, Index, Indicators, Institutions, International, Investigation, Journal, Journals, Medical, Medical Journals, MEDLINE, Methods, Papers, Participation, Pathology, Publishing, Qualitative, Role, Science, Science Citation Index, Scientific Production, Trend

? Nunes, P. (2008), Portuguese indexed medical act of the Science Citation Index. *Acta Médica Portuguesa*, **21** (6), 525.

? Donato, H. and De Oliveira, C.F. (2009), Bibliometry of cancer in Portugal: 1997 to 2006. *Acta Médica Portuguesa*, **22** (1), 41-50.

Full Text: [2009\Act Méd Por22, 41.pdf](2009/Act%20Méd%20Por22,%2041.pdf)

Abstract: Introduction: the scientific production of Portuguese institutions in the specific field Oncology during a 10 year period (1997-2006) was evaluated. The contribution of national authors to the international scientific production was verified. This enabled to assess and quantify the importance of authors, departments, institutions and scientific investigations. Material and Methods: Using version 2006 of Web of Science, section Science Citation Index, a database of literature references which enables analysis of citations, and also the Journal Citation Reports (tools produced by ISI Thomson Scientific), a quantitative and qualitative analysis of the Portuguese scientific production on cancer between 1997 to 2006 was performed. Results: during the studied period, 1.384 articles were published in scientific journals with given impact factor, which obtained a total of 16.484 citations, corresponding to a mean of 11.91 citations per article. Between 1997 and 2006 an increase of 214% was noticed in the national scientific production in the selected field. Ten authors represent 46% of the produced documents. The majority of published articles were performed by Universities, being Oporto University the one with highest contribution. Co-authorship is the rule in the production of articles and Portugal is no exception. Articles with international collaboration where those which obtained the highest citation rate. The Portuguese contribution to the international scientific production in the field of Oncology in the studied period was of 0.21%. Conclusions: Bibliometric analysis is a reliable tool to evaluate the development and quality of scientific production. A growing visibility of investigation in this area was observed. This conclusion is based on the increase in the number of articles published in international journals of recognized reputation. National authors publish few articles, but they select high standard journals.

Keywords: Analysis, Authors, Bibliometric, Bibliometric Analysis, Cancer, Citation, Citations, Collaboration, Contribution, Database, Development, Field, Fields, Impact, Impact Factor, Institutions, International, Investigation, Investigations, ISI, Journal Citation Reports, Journal Impact, Journals, Literature, Majority, National, Portugal, Portuguese, Production, Qualitative, Qualitative Analysis, Quality, Quality of, References, Reputation, Science, Science Citation Index, Scientific Journals, Scientific Production, Standard, Strengths, Tool, Version, Visibility, Weaknesses, Web of Science

? Fernandez-Llimos, F. and Mendes, A.M. (2010), Scientific production in international journals by *Acta Médica Portuguesa* authors. *Acta Médica Portuguesa*, **23** (4), 561-566.

Full Text: [2010\Act Méd Por23, 561.pdf](2010/Act%20Méd%20Por23,%20561.pdf)

Abstract: Local and national scientific journals have been widely criticized by some authors. Additionally, they are quite rarely indexed at international databases, which results in a reduced visibility of their articles. Objective: To analyze international scientific productions of authors publishing in Acta Medica Portuguesa during 2008. Methods: A database with all the authors publishing in Acta Medica Portuguesa in 2008 was built. In July 2009, production of all those authors from the previous five years (20032007) was retrieved from Science Citation Index. Journals where they published, Impact Factors of those journals, articles’ references, and times cited were analyzed. Results: The 78 articles published by Acta Medica Portuguesa in 2008 were produced by 259 different authors. Ninety four (36.3%) of those authors wrote 420 articles from 2003 to 2007 indexed at Science Citation Index. These articles were published in 249 different journals, with an average Impact Factor of 2.973 (SD = 2.92). Journal with highest Impact Factor was The Lancet (IF2008 = 28.409) with two papers published. Eighty seven of those authors received some citation to their articles, with a total amount of 5001 cites. Out of the 14035 references on those 420 articles, only 10 cited any article published in Acta Medica Portuguesa. Conclusion: Authors publishing in Acta Medica Portuguesa produce a good amount of international publications in journals with an acceptable Impact Factor and they receive quite a good number of citations. Conversely, these authors when publishing in international journals have an extremely low citation of articles published in Acta Medica Portuguesa.

# Title: Acta Medica Scandinavica

Full Journal Title: Acta Medica Scandinavica

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0365-8066

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Scandinavian University Press, Oslo

Publisher Address:

Subject Categories:

: Impact Factor

? Luoma, H., Aromaa, A., Helminen, S., Murtomaa, H., Kiviluoto, L., Punsar, S. and Knekt, P. (1983), Risk of myocardial-infarction in finnish men in relation to fluoride, magnesium and calcium-concentration in drinking-water. *Acta Medica Scandinavica*, **213** (3), 171-176.

# Title: Acta Neurologica Scandinavica

Full Journal Title: [Acta Neurologica Scandinavica](http://www.blackwell-synergy.com/servlet/useragent?func=showIssues&code=ane)

ISO Abbreviated Title: Acta Neurol. Scand.

JCR Abbreviated Title: Acta Neurol Scand

ISSN: 0001-6314

Issues/Year: 12

Journal Country/Territory: Denmark

Language: English

Publisher: Munksgaard Int Publ Ltd

Publisher Address: 35 Norre Sogade, PO Box 2148, DK-1016 Copenhagen, Denmark

Subject Categories:

Clinical Neurology: Impact Factor

? Grehl, H., Grahmann, F., Claus, D., Neundorfer, B. (1993), Histologic evidence for a toxic polyneuropathy due to exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in rats. *Acta Neurologica Scandinavica*, **88** (5), 354-357.

Abstract: 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) is a considerable environmental hazard in industrial societies. Its toxic effects on animals and humans are numerous, but little is known about its neurotoxicity. We studied the neurotoxic effects of TCDD in 80 male, adult Wistar rats. The substance was dissolved in com oil and a single dose injected intraperitoneally (8.8 µg, 6.6 µg, 4.4 µg or 2.2 µg/kg). Neurophysiological examinations proved a dose-related, statistically significant slowing of sensory and motor conduction velocities. Ten months after the application of TCDD peripheral nerves showed a progressive, and proximally accentuated neuropathy. The extent of changes, however, differed remarkably between individual animals. Our data indicate that TCDD caused a toxic polyneuropathy in rats.

Keywords: 2,3,7,8-Tetrachlorodibenzo-p-Dioxin, Toxic Neuropathy, Dioxin, Peripheral Neuropathy, TCDD

# Title: Acta Neuropsychiatrica

Full Journal Title: Acta Neuropsychiatrica

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hunt, G.E. (2011), Making sense of bibliometrics. *Acta Neuropsychiatrica*, **23** (2), 80-81.

Full Text: [2011\Act Neu23, 80.pdf](2011/Act%20Neu23,%2080.pdf)

Keywords: Bibliometrics, Citations, h-Index, Impact Factor, Science

# Title: Acta Obstetricia et Gynecologica Scandinavica

Full Journal Title: Acta Obstetricia et Gynecologica Scandinavica

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Tummon, I., Gavrilova-Jordan, L., Allemand, M.C. and Session, D. (2005), Polycystic ovaries and ovarian hyperstimulation syndrome: A systematic review. *Acta Obstetricia et Gynecologica Scandinavica*, **84** (7), 611-616.

Full Text: [2005\Act Obs Gyn Sca84, 611.pdf](2005/Act%20Obs%20Gyn%20Sca84,%20611.pdf)

Abstract: Objectives. To assess and quantify the relationship between polycystic ovaries (PCOs) and ovarian hyperstimulation syndrome (OHSS). Data Sources. Published studies, any language, identified through MEDLINE, EMBASE, BIOSIS, Web of Science, and bibliographies. Studies were selected if exposure (ultrasound findings of PCO before treatment) and outcome (OHSS) could be abstracted to two-by-two tables. Results. Ten studies, meeting inclusion and exclusion criteria, were analyzed. When PCO were present, the combined odds ratio for OHSS was 6.8 (95% confidence interval 4.9-9.6). Conclusion. There is a significant and consistent relationship between PCO and OHSS. When PCO are present before treatment with assisted reproduction, deliberate policies to moderate treatment appear justified.

Keywords: Embase, Features, Gonadotropin-Releasing-Hormone, In-Vitro Fertilization, Invitro Fertilization, Medline, Morphology, Number, Outcome, Ovarian Hyperstimulation Syndrome, Policies, Polycystic Ovaries, Pregnancy, Ratio, Reproduction, Review, Risk-Factors, Science, Sources, Stimulation, Systematic, Systematic Review, Treatment, Ultrasonography, Ultrasound, Web of Science, Women

? Hansen, A.K., Wisborg, K., Uldbjerg, N. and Henriksen, T.B. (2007), Elective caesarean section and respiratory morbidity in the term and near-term neonate. *Acta Obstetricia et Gynecologica Scandinavica*, **86** (4), 389-394.

Full Text: [2007\Act Obs Gyn Sca86, 389.pdf](2007/Act%20Obs%20Gyn%20Sca86,%20389.pdf)

Abstract: Aim. The aim of this review was to assess the relationship between delivery by elective caesarean section and respiratory morbidity in the term and near-term neonate. Methods. Searches were made in the MEDLINE database, EMBASE, Cochrane database and Web of Science to identify peer-reviewed studies in English on elective caesarean section and respiratory morbidity in the newborn. We included studies that compared elective caesarean section to vaginal or intended vaginal delivery, with clear definition of outcome measures and information about gestational age. Results. Nine eligible studies were identified. All studies found that delivery by elective caesarean section increased the risk of various respiratory morbidities in the newborn near term compared with vaginal delivery, although the findings were not statistically significant in all studies. It was inappropriate to carry out a meta-analysis with a pooled risk estimate because of a variety of methodological differences between the studies. The overall risk for respiratory morbidity, however, seemed to increase about 2 to 3 times, though some studies presented much higher risk estimates. A decreasing risk with increasing gestational age was shown in 2 studies. Conclusion. Delivery by elective caesarean section was shown to increase the risk of respiratory morbidity in all studies eligible for inclusion. The magnitude of this relative risk seemed to depend on gestational age even in deliveries after 37 completed weeks of gestation.

Keywords: Cochrane, Delivery, Distress Syndrome, Elective Caesarean Section, Embase, Gestational-Age, Infants, Information, Labor, Medline, Meta-Analysis, Methods, Mode, Morbidity, Outcome, Relative Risk, Respiratory Morbidity in the Newborn, Review, Risk, Route, Science, Systematic Review, Trial, Web of Science

? Sandven, I., Abdelnoor, M., Nesheim, B.I. and Melby, K.K. (2009), *Helicobacter pylori* infection and hyperemesis gravidarum: A systematic review and meta-analysis of case-control studies. *Acta Obstetricia et Gynecologica Scandinavica*, **88** (11), 1190-1200.

Full Text: [2009\Act Obs Gyn Sca88, 1190.pdf](2009/Act%20Obs%20Gyn%20Sca88,%201190.pdf)

Abstract: Objective. To summarize the evidence from epidemiological studies examining the association between Helicobacter pylori infection and hyperemesis gravidarum. Design. Systematic review and meta-analysis of case-control studies. Material and methods. We searched the Medline/PubMed, Embase, Cinahl, ISI Web of Science and Biological Abstracts databases from 1966 to 17 June 2008 and finally Google Scholar. A total of 25 case-control studies were identified. Both fixed-effect and random-effect models were used to synthesize the results of individual studies. The Cochran Q, tau(2) of between-study variance and index of heterogeneity (I(2)) were used to evaluate heterogeneity. Heterogeneity between studies was examined by subgroup and random effect meta-regression analyses. Publication bias was evaluated. Results. Publication bias was not observed. The random model pooled estimate was odds ratio = 3.32, 95 % confidence interval (CI): 2.25-4.90. A high heterogeneity was pinpointed (I(2) = 80 %, 95 % CI: 65-89). Subgroup analysis and meta-regression showed a weaker association in studies with a clear definition of hyperemesis gravidarum compared to studies without this condition, and weaker association in recent studies compared to earlier studies. Meta-regression showed that these two study characteristics explained 40% of heterogeneity between studies. Conclusions. Exposure to H. pylori appears to be associated with an increased risk of hyperemesis gravidarum. The residual heterogeneity might have different reasons. Given the high prevalence of H. pylori, the public health consequence of H. pylori with regard to hyperemesis gravidarum may be important.

Keywords: Analysis, Bias, Case-Control Studies, Case-Control Study, Databases, Epidemiology, Google Scholar, Helicobacter Pylori, Hyperemesis Gravidarum, Infection, ISI, Meta-Analysis, Model, Population, Pregnancy, Prevalence, Public Health, Publication Bias, Ratio, Response Bias, Review, Risk, Risk-Factors, Science, Seropositivity, Symptoms, Systematic, Systematic Review, Web of Science

? Kramer, M.R., Hogue, C.J., Dunlop, A.L. and Menon, R. (2011), Preconceptional stress and racial disparities in preterm birth: An overview. *Acta Obstetricia et Gynecologica Scandinavica*, **90** (12), 1307-1316.

Full Text: [2011\Act Obs Gyn Sca90, 1307.pdf](2011/Act%20Obs%20Gyn%20Sca90,%201307.pdf)

Abstract: Objective. We reviewed the evidence for three theories of how preconceptional psychosocial stress could act as a contributing determinant of excess preterm birth risk among African American women: early life developmental plasticity and epigenetic programming of adult neuroendocrine systems; blunting, weathering, or dysfunction of neuroendocrine and immune function in response to chronic stress activation through the life course; individuals adoption of risky behaviors such as smoking as a response to stressful stimuli. Methods. Basic science, clinical, and epidemiologic studies indexed in MEDLINE and Web of Science databases on preconceptional psychosocial stress, preterm birth and race were reviewed. Results. Mixed evidence leans towards modest associations between preconceptional chronic stress and preterm birth (for example common odds ratios of 1.21.4), particularly in African American women, but it is unclear whether this association is causal or explains a substantial portion of the BlackWhite racial disparity in preterm birth. The stress-preterm birth association may be mediated by hypothalamic-pituitary-adrenal axis dysfunction and susceptibility to bacterial vaginosis, although these mechanisms are incompletely understood. Evidence for the role of epigenetic or early life programming as a determinant of racial disparities in preterm birth risk is more circumstantial. Conclusions. Preconceptional stress, directly or in interaction with host genetic susceptibility or infection, remains an important hypothesized risk factor for understanding and reducing racial disparities in preterm birth. Future studies that integrate adequately sized epidemiologic samples with measures of stress, infection, and gene expression, will advance our knowledge and allow development of targeted interventions.

Keywords: Activation, Adult, African American, African-American Women, Association, Bacterial, Bacterial Vaginosis, Behavioral Risk-Factors, Black-Women, Corticotropin-Releasing Hormone, Databases, Delivery, Development, Discrimination, Disparities, Disparity, Epidemiologic Studies, Fetal-Growth, Gene Expression, Genetic, Genetic Susceptibility, Health Disparities, Immune, Infant Health, Infection, Interventions, Knowledge, Maternal Age, Mechanisms, Medline, Methods, Overview, Preterm, Preterm Birth, Psychosocial, Psychosocial Stress, Race, Racial Disparities, Risk, Risk Factor, Science, Severe Life Events, Smoking, Stress, Susceptibility, Theories, Web of Science, White Women, Women

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? Rolla, G. and Bowen, W.H. (1978), Surface-adsorption of fluoride and ionic exchange-reactions on hydroxyapatite. *Acta Odontologica Scandinavica*, **36** (4), 219-224.

Full Text: [1960-80\Act Odo Sca36, 219.pdf](1960-80/Act%20Odo%20Sca36,%20219.pdf)

? Rykke, M., Sonju, T., Skjorland, K. and Rolla, G. (1989), Protein adsorption to hydroxyapatite and to calcium-fluoride invitro and amino-acid analyses of pellicle formed on normal enamel and on calcium-fluoride-covered enamel invivo. *Acta Odontologica Scandinavica*, **47** (4), 245-251.

Full Text: [1989\Act Odo Sca47, 245.pdf](1989/Act%20Odo%20Sca47,%20245.pdf)

? Arnebrant, T. and Simonsson, T. (1991), The effect of ionic surfactants on salivary proteins adsorbed on silica surfaces. *Acta Odontologica Scandinavica*, **49** (5), 281-288.

Full Text: [1991\Act Odo Sca49, 281.pdf](1991/Act%20Odo%20Sca49,%20281.pdf)

Abstract: The adsorption onto silicon oxide surfaces from water and 0.1 M acetate buffer containing 10% parotid saliva at 25-degrees-C and 35-degrees-C and at pH 6 was monitored in situ using ellipsometry. The silicon oxide surface was used as a model for dental enamel. The adsorption kinetics and the reversibility on insing were determined, and the desorbable fraction was found not to change after either 30 or 120 min of adsorption. Addition of sodium dodecyl sulfate after 30 or 120 min of saliva adsorption caused strong desorption. Rinsing 30 min after surfactant addition caused some redeposition if saliva was present, whereas continued desorption occurred in the absence of saliva. Cetyltrimethylammonium bromide caused either an increase or a slight decrease in the amount adsorbed when added after 30 min and 120 min, respectively. For both times, rinsing caused desorption, left the same amount adsorbed, and was not affected by the presence or absence of saliva in solution. No major effect from temperature and ionic strength was found.

Keywords: Acquired Pellicle, Adsorption, Agents, Dental Plaque, Ellipsometry, Enamel, Fluoride, Invitro, Sulfate, Toothpaste

? Bondemark, L. and Lilja-Karlander, L. (2004), A systematic review of Swedish research in orthodontics during the past decade. *Acta Odontologica Scandinavica*, **62** (1), 46-50.

Full Text: [2004\Act Odo Sca62, 46.pdf](2004/Act%20Odo%20Sca62,%2046.pdf)

Abstract: The aims of this systematic review were to identify the study designs and topics of Swedish orthodontic articles, to elucidate their international position, and to verify in which scientific journals the articles had been published in the past decade. A search of the MEDLINE database for papers published between 1992 and 2002 was made using the Medical Search Heading terms ‘orthodontics’, ‘malocclusion’, ‘cephalometry’, and ‘facial bones and growth’. Two independent reviewers selected the articles of Swedish origin and categorized each article according to research design and principal topic. Overall, 15,571 articles in orthodontic research were found, and the Swedish contribution was 1.9% with the majority of these (71.5%) being submitted by universities. Most of the Swedish articles (84.5%) had been published in 10 journals and many high-quality studies with orthodontic interest were published in nonorthodontic journals with higher impact factor scores than the orthodontic journals. Every second study was prospective, and of these, 15 (5.2% of all Swedish articles) were randomized clinical trials (RCTs). It was found that nearly every third study, prospective as well as retrospective, was uncontrolled. The main classification was treatment studies (51.9%), followed by development (18.6%) and diagnostic information (10.7%) studies. Thus, the majority of the articles evaluated therapeutic interventions; however, although the RCT is the preferred study design in evaluation studies, few used this method. In an era focused on evidence-based medicine, studies with an RCT design will be the future challenge for research in the field of orthodontics.

Keywords: Bibliometrics, Classification, Clinical Trials, Database, Dentistry, Development, Evaluation, Evaluation Studies, Evidence-Based Medicine, Growth, Impact, Impact Factor, Information Science, Journals, Medical Informatics, Medline, Orthodontics, Papers, Quality, Research, Scientific Journals, Study Design, Treatment, Trials

? Poulsen, S., Gjorup, H., Haubek, D., Haukali, G., Hintze, H., Lovschall, H. and Errboe, M. (2008), Amelogenesis imperfecta - A systematic literature review of associated dental and oro-facial abnormalities and their impact on patients. *Acta Odontologica Scandinavica*, **66** (4), 193-199.

Full Text: [2008\Act Odo Sca66, 193.pdf](2008/Act%20Odo%20Sca66,%20193.pdf)

Abstract: Objective. Amelogenesis imperfecta (AI) is a disease primarily affecting amelogenesis, but other aberrations have been reported. The purposes of this review were: (1) to identify other anomalies associated with AI, and (2) to describe the impact of the disease and its associated conditions on the oral health-related quality of life of patients, and the economic consequences. Material and methods. A literature search was conducted in the following databases: PubMed, EMBASE, Bibliotek.dk, The Cochrane Library, Web of Science, and OMIM, supplemented by a search for selected authors. Based on titles and abstracts, 137 papers were identified. Results. Most articles were case reports or case series with few cases. Aberrations were reported in the eruption process, in the morphology of the crown, in the pulp-dentine organ, and in the number of teeth. Gingival conditions and oral hygiene were usually reported to be poor, and calculus was a common finding. Open bite was the most commonly reported malocclusion. A negative impact on patients’ oral health-related quality of life was described, but information was scarce. No information was found on the economic impact. Conclusions. A number of aberrations associated with AI have been reported, but not sufficiently systematic to allow for a secondary analysis and synthesis of the findings. The impact on patients in terms of reduced quality of life and economic burden needs to be studied.

Keywords: Amelogenesis Imperfecta, Analysis, Associated Anomalies, Authors, Burden, Case Reports, Case Series, Ceramic Restorations, Clinical Report, Cochrane, Databases, Disease, Economic Burden, Embase, Health-Related Quality of Life, Hereditary, Hypomaturation Type, Impact, Information, Literature, Literature Review, Northern Swedish County, Open Bite Deformity, Oral Rehabilitation, Papers, Pubmed, Quality of Life, Restoring Function, Review, Science, Skeletal Open Bite, Systematic, Systematic Literature Review, Systematic Review, Taurodontism, Web of Science

? Alanko, O.M.E., Svedstrom-Oristo, A.L. and Tuomisto, M.T. (2010), Patients’ perceptions of orthognathic treatment, well-being, and psychological or psychiatric status: A systematic review. *Acta Odontologica Scandinavica*, **68** (5), 249-260.

Full Text: [2010\Act Odo Sca68, 249.pdf](2010/Act%20Odo%20Sca68,%20249.pdf)

Abstract: Objective. To conduct a systematic review of studies concerning the psychosocial well-being of surgical orthodontic patients. Material and methods. Articles published between 2001 and 2009 were searched using PubMed, Web of Science, and PsycInfo. Only articles written in English were included. Articles on methodological issues or on patients with clefts or syndromes or studies in which treatment had included surgically assisted maxillary expansion or intermaxillary fixation were excluded. The exclusion of articles was carried out in collaboration with two reviewers. To find new relevant articles, references from all the obtained review articles were hand-searched. Thirty-five articles fulfilled the selection criteria and were included in this review. Results. The main motives for seeking treatment were improvements in self-confidence, appearance, and oral function. Patients were not found to suffer from psychiatric problems. Treatment resulted in self-reported improvements in well-being, even though these improvements were not found with current assessment methods. Changes in well-being were most often registered using measures designed for evaluation of the impact of oral health on quality of life (e.g. the Orthognathic Quality of Life Questionnaire and the Oral Health Impact Profile). Conclusions. Surgical orthodontic patients do not experience psychiatric problems related to their dentofacial disharmony in general. However, subgroups of patients may still experience problems, such as anxiety or depression, as many studies only report patients’ mean problem scores and compare them to controls’ scores or population norms. New assessment methods focusing on day-to-day changes in mood and well-being, as well as prospective studies with controls, are needed.

Keywords: Anxiety, Articles, Assessment, Body-Image, Collaboration, Dentofacial Deformity, Depression, Depression Scale, Disorder, Evaluation, Facial Appearance, Follow-up, Health, Impact, Mood, Perceptions, Profile, Prospective Studies, Psychological, Psychosocial, Pubmed, Quality, Quality of Life, Quality-of-Life, Review, Satisfaction, Science, Social, Surgery, Surgical, Systematic, Systematic Review, Treatment, Web of Science

# Title: Acta Oecologica-International Journal of Ecology

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? Schnitzler, A. (1995), Community Ecology of Arboreal Lianas in Gallery Forests of the Rhine Valley, France. *Acta Oecologica-International Journal of Ecology*, **16** (2), 219-236.

Abstract: The phanerophyte liana population of Clematis vitalba and Hedera helix is described in different successional stands of the gallery forests of the Rhine valley, Alsace, France. The liana population presents a wide variety of abundance along the Rhine and its tributary, the Ill, according to gradients of light, flooding severity, hydromorphy or presence of shade tree species. In the Rhine forests, young (30 years) and old (150 years) stands were chosen of Salici-Populetum (including two sub-associations), Fraxino-Populetum albae and Ligustro-Populetum nigrae. Four stands were selected in end-successional Querco-Ulmetum: 2 in the sub-association populetosum (one prone to flooding, the other deprived of flooding since the Rhine canalization in 1960), one in the sub-association carpinetosum (deprived of flooding since the building of dykes in 1850) and one in the sub-association tilietosum, on high, sandy high terraces. In the Ill forests, the liana population was studied in 4 associations which segregate along a moisture gradient: Alnetum glutinosae, Pruno-Fraxinetum, Alno-Carpinetum and Stellario-Carpinetum In each stand, the structure in the woody layers (density in stems.ha-1; basal area in m(2).ha-1) was studied during the summers of 1990 and 1992. Species diversity was calculated with the Shannon H’ index. The study focuses on the liana population, with calculation of total liana density, basal area of giant lianas, percentage of giant lianas in the total woody population, in the canopy and the underlayers. Linear regression between structure of the stands and structure of the liana population was used. Results show that liana density and basal area peak when total density and basal area of the stands are highest. Liana density is highest in the Rhine forests, due to the absence of below-hydromorphic horizons and of shade trees in the canopy. The liana population peaks in most of the young stands except the densest (Fraxino-Populetum albae) and the driest ones (Hippophae-Betuletum). Giant lianas (30-15 m high, 6-8 cm DBH) are characteristics of old stands. Most of them are Hedera helix. The number of giant lianas.ha-1 is significantly correlated to total stand density, but not to canopy density. The number of giant lianas in the canopy is high in Querco-Ulmetum populetosum (30%; 42.7%). In Querco-Ulmetum carpinetosum, the number of giant lianas decreases to 7.3%, due to decrease in nutrient supply, but probably also following the more intense and long-term influence of man. These results indicate the favourable influence of flooding on the ecology of lianas by regular supplies of nutrients and water, if the soils are not hydromorphic. Flooding plays an indirect role on the integration of lianas in the forest ecosystem through its influence on the woody density of the underlayers and its internal organization. This explains the peaks of giant lianas in some flooded highly-levelled ecosystems such as Qeurco-Ulmetum (H’ = 3.4), Alno-Carpinetum (H’ = 2.8) or Salici-Populetum populetosum (H’ = 2.8). Extreme moisture is the main unfavourable factor preventing liana growth in the Ill swamps and old channels, colonized by Alnetum glutinosae and Pruno-Flaxinetum. In mesophilic sites, dominance of shade species (Carpinus betulus) in the canopy is a very unfavourable factor for the growth of woody lianas. This factor limits the liana population in Alno-Carpinetum and totally eliminates it in Stellario-Carpinetum.

Keywords: Canopy Arboreal Liana, Characteristics, Ecosystem, Flooding Stress, France, Gallery Forests, Gap, Growth, Integration, Liana Population, Linear Regression, Long Term, Long-Term, Moisture, Organization, Population, Regression, Rhine Valley, Soils, Structure, Succession, Water

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Oncology: Impact Factor 1.909, 60/114 (2002)

? Antila, H.M.J., Salo, M.S., Nanto, V., Nikkanen, V. and Kirvela, O. (1992), The effect of postoperative radiotherapy on leukocyte zinc, serum trace-elements and nutritional-status of breast-cancer patients. *Acta Oncologica*, **31** (5), 569-572.

Abstract: Mononuclear (MNC) and polymorphonuclear cell (PMNC) zinc content was determined together with serum zinc, copper, selenium and iron concentrations in 24 operable breast cancer patients during and after postoperative radiotherapy. Anthropometric and biochemical indices of nutritional status were measured as background data. The measurements were carried out in the years 1987-1988. Nine patients used unconventional multivitamin or trace element preparations. A steady but statistically insignificant decrease in PMNC zinc was seen during treatment. No changes occurred in MNC zinc. Serum copper levels increased in five patients possibly due to tamoxifen treatment, but no other alterations occurred in serum trace element levels. Appetite was well maintained and nutritional status remained unaltered. Postoperative radiotherapy for breast carcinoma had thus no effect on either trace element or nutritional status. Patient-initiated alternative treatments did not significantly affect their trace element levels. This was probably due to small supplementation doses or irregular use of the preparations.

Keywords: Surgical Patients, Selenium, Copper

? Chu, D., Lacouture, M.E., Fillos, T. and Wu, S.H. (2008), Risk of hand-foot skin reaction with sorafenibo: A systematic review and metes-analysis. *Acta Oncologica*, **47** (2), 176-186.

Full Text: [2008\Act Onc47, 176.pdf](2008/Act%20Onc47,%20176.pdf)

Abstract: Background. Hand-foot skin reaction (HFSR) is a dose-limiting toxicity associated with sorafenib, an oral multi-kinase inhibitor with clinical activity against solid tumors. This study was conducted to determine the risk of developing HFSR among patients receiving sorafenib. Patients and Methods. Databases from Pubmed, Web of Science, and abstracts presented at the American Society of Clinical Oncology annual meetings from 2004 through July, 2007 were searched to identify relevant studies. Eligible studies were prospective clinical trials using single agent sorafenib. The summary incidence rate and the relative risk (RR) were calculated using random-effects model. Results. A total of 4 883 patients in 11 trials with metastatic tumors were included for analysis. Among patients receiving sorafenib, the summary incidence of all-grade HFSR was 33.8% (95% CI: 24.5-44.7%) with significant difference between patients with RCC and non-RCC malignancy (RR 1.52, 95% CI: 1.32-1.75%, p <0.001). The incidence of high-grade HFSR was 8.9% (95% CI: 7.3-10.7%). In addition, sorafenib was associated with a significant increased risk of HFSR with RR of 6.6 (95% CI: 3.7 to 11.7, p <0.001) in comparison with controls. Conclusion. There is a significant risk of HFSR associated with sorafenib. Proper management and further study are recommended to reduce the risk.

Keywords: Advanced Solid Tumors, Analysis, Bay-43-9006, C-Kit, Clinical Trials, Clinical-Trials, Databases, Kinase Inhibitors, Kit-Ligand, Malignancy, Management, Methods, Model, Oncology, Phase-I, Pyridoxine Therapy, Relative Risk, Renal-Cell Carcinoma, Review, Risk, Science, Sunitinib, Systematic, Systematic Review, Toxicity, Web of Science

? Zhu, X.L., Stergiopoulos, K. and Wu, S. (2009), Risk of hypertension and renal dysfunction with an angiogenesis inhibitor sunitinib: Systematic review and meta-analysis. *Acta Oncologica*, **48** (1), 9-17.

Full Text: [2009\Act Onc48, 9.pdf](2009/Act%20Onc48,%209.pdf)

Abstract: Background. Sunitinib is a multitargeted tyrosine kinase inhibitor used in the treatment of metastatic renal cell carcinoma (RCC) and gastrointestinal stromal tumor (GIST), and undergoing evaluation for other malignancy. Hypertension is one of its major side effects with a substantial variation in the reported incidences among clinical studies. We here performed a systematic review and meta-analysis of published clinical trials to determine its overall risk. Methods. Relevant studies were searched and identified in MEDLINE (OVID 1966 to July, 2007), Web of Science, and abstracts presented at the American Society of Clinical Oncology annual meetings from 2004 through 2007. Eligible studies were prospective clinical trials that had described events of hypertension for patients who received single agent sunitinib. The incidence of hypertension and relative risk (RR) were calculated using the random-effects or the fixed-effects model. Results. A total of 4, 999 patients with RCC and other malignancies from 13 clinical trials were included for analysis. Among patients receiving sunitinib, the incidence of all-grade and high-grade hypertensions were 21.6% (95% CI: 18.7-24.8%) and 6.8% (95% CI: 5.3-8.8%) respectively. The risk may vary with tumor type and the dosing schedule of sunitinib. Sunitinib was associated with a significantly increased risk of high-grade hypertension (RR = 22.72, 95% CI: 4.48 to 115.29, p < 0.001) and renal dysfunction (RR: 1.36, 95% CI: 1.20 to 1.54, p < 0.001) in comparison with controls. Conclusions. There is a significant risk of developing hypertension and renal dysfunction among patients receiving sunitinib. Adequate monitoring and treatment of hypertension is recommended.

Keywords: Analysis, Angiogenesis, Cancer, Carcinoma, Cell Carcinoma, Clinical Trials, Endothelial Growth-Factor, Evaluation, Factor Receptor, Gastrointestinal, Hypertension, Malignancy, Medline, Meta-Analysis, Methods, Model, Models, Monitoring, Oncology, Proteinuria, Relative Risk, Review, Risk, Science, Su11248, Systematic, Systematic Review, Therapy, Treatment, Tyrosine Kinase Inhibitor, Web of Science

? Ranpura, V., Hapani, S., Chuang, J. and Wu, S.H. (2010), Risk of cardiac ischemia and arterial thromboembolic events with the angiogenesis inhibitor bevacizumab in cancer patients: A meta-analysis of randomized controlled trials. *Acta Oncologica*, **49** (3), 287-297.

Full Text: [2010\Act Onc49, 287.pdf](2010/Act%20Onc49,%20287.pdf)

Abstract: Background. The risk of cardiovascular toxicities is a serious concern with the increased application of angiogenesis inhibitors in current cancer therapy. Arterial thromboembolic events (ATE) were associated with bevacizumab, an antibody against vascular endothelial growth factor. To determine the risk of ATE including cardiac ischemia and stroke, a systematic review and meta-analysis of published randomized controlled trials (RCTs) was performed. Methods. We searched the databases of PubMed, Web of Science, and American Society of Clinical Oncology conferences to identify relevant clinical trials up to May, 2009. Eligible studies included prospective RCTs in which bevacizumab was compared to a control concurrently in combination with standard anti-neoplastic therapy. Summary incidence rates, relative risks (RRs), and 95% confidence intervals (CIs) were calculated using random-effects or fixed-effects models. Results. A total of 12 617 patients with a variety of advanced solid tumors from 20 RCTs were included for analysis. The incidences of all-grade and high-grade ATE in patients receiving bevacizumab were 3.3% (95% CI, 2.0-5.6%) and 2.0% (95% CI, 1.7-2.5) respectively. Patients treated with bevacizumab had a significantly increased risk of ATE with an RR of 1.44 (95% CI, 1.08-1.91; p=0.013) compared with controls. The risk similarly increased for bevacizumab at 2.5 and 5 mg/kg/week; in addition, significantly increased risks were observed in patients with renal cell cancer (RR, 3.72, 95% CI, 1.15-12.04; p=0.029) and colorectal cancer (RR, 1.89, 95% CI, 1.28-2.80, p=0.001). Notably, the risk of high-grade cardiac ischemia with bevacizumab was significantly higher than controls with an RR of 2.14 (95% CI, 1.12-4.08, p=0.021); however, the risk of ischemic stroke with bevacizumab was not significantly different from controls (RR, 1.37, 95% Cl, 0.67-2.79, p=0.39). Discussion. Treatment with bevacizumab may significantly increase the risk of cardiac ischemic events in cancer patients.

Keywords: 1st-Line Therapy, Analysis, Angiogenesis, Bevacizumab, Breast-Cancer, Cancer, Cardiovascular, Clinical Trials, Colorectal Cancer, Combination, Confidence Intervals, Control, Databases, Endothelial Growth-Factor, Fluorouracil, Ischemia, Lung-Cancer, Meta-Analysis, Metastatic Colorectal-Cancer, Methods, Oncology, Phase-III Trial, Pubmed, Randomized Controlled Trials, Renal-Cell Carcinoma, Review, Risk, Science, Stroke, Systematic, Systematic Review, Therapy, Tumor-Growth, Vascular Endothelial Growth Factor, Web of Science

? Sher, A. and Wu, S.H. (2011), Anti-vascular endothelial growth factor antibody bevacizumab reduced the risk of anemia associated with chemotherapy: A meta-analysis. *Acta Oncologica*, **50** (7), 997-1005.

Full Text: [2011\Act Onc50, 997.pdf](2011/Act%20Onc50,%20997.pdf)

Abstract: Introduction. Vascular endothelial growth factor (VEGF) may play a role in erythropoiesis. We performed a meta-analysis of randomized controlled trials (RCT) to determine the effect of the anti-VEGF antibody bevacizumab on anemia in cancer patients treated with chemotherapy. Methods. Databases from PUBMED, the Web of Science, Embase, the Cochrane Library, and abstracts presented at the American Society of Clinical Oncology (ASCO) conferences until May 2010 were searched to identify relevant studies. Eligible studies included prospective RCTs in which the combination of bevacizumab and chemotherapy was compared with chemotherapy alone. Summary incidence rate, relative risk (RR), and 95% confidence interval (CI) were calculated. Results. A total of 6439 patients with a variety of solid tumors were included for analysis from 11 RCTs. Among those patients receiving bevacizumab and chemotherapy, the incidences of all-grade and high-grade (grade 3 and above) anemia were 17.8% (95% CI: 11.1-27.1%) and 2.8% (95% CI: 1.6-5.0%) respectively. In comparison with chemotherapy alone, bevacizumab significantly reduced all-grade (RR, 0.79; 95% CI: 0.66-1.0, p = 0.007) and high-grade anemia (RR, 0.72; 95% CI: 0.57-0.90, p = 0.005). The effect did not vary significantly among bevacizumab doses (p = 0.88), tumor types (p = 0.75) or chemotherapy regimens (p = 0.98). Discussion. Bevacizumab may significantly reduce the risk of anemia with chemotherapy in cancer patients.

Keywords: Analysis, Anti-Vegf Antibody, Bevacizumab, Cancer, Chemotherapy, Cochrane, Combination, Databases, Erythropoiesis, Gemcitabine, Growth, Incidence, Lung-Cancer, Meta Analysis, Meta-Analysis, Metastatic Breast-Cancer, Methods, Oncology, Paclitaxel, Patients, Phase-III Trial, Randomized Controlled Trials, Relative Risk, Renal-Cell Carcinoma, Risk, Science, VEGF, Venous Thromboembolism, Web of Science

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? Inzelt, A. and Schubert, A. (2011), Collaboration between researchers from academic and non-academic organisations a case study of co-authorship in 12 Hungarian Universities. *Acta Oeconomica*, **61** (4), 441-463.

Full Text: [2011\Act Oec61, 441.pdf](2011/Act%20Oec61,%20441.pdf)

Abstract: Throughout the reform process of the European university system, the importance of collaboration between actors at the academy and other areas of the economy and society are ever increasing, as evidenced by a growing number of co-authored articles and the number of citations to such works. This article analyses the characteristics of publications co-authored by Hungarian university researchers with non-academic partners. Scientometric indicators are used as primary methodological tools. Our sample was the publication output of 12 universities, which covers 90% of the university sphere's publications, between 2001 and 2005 and was taken from the publications of Hungarian institutions of higher education appearing in the Web of Science database. The authors employed a new, important aspect in the cooperation activity of Hungarian universities: their connection with the non-academic partners. The selection and the institutional location of the co-authors resulted in an important database for further analysis. Based on the empirical analysis of the publication and citation performance data of 12 such universities the authors concluded that the proportion of citations to publications co-authored with either academic or non-academic partners is significantly higher for international partners than it is for Hungarian ones. For one publication, the proportion of citations to articles co-authored with foreign non-academic partners, such as firms or health care institutions, was five times higher than the number relating to papers co-authored with Hungarian firms or health care institutions. Higher citedness of the joint articles with the foreign country institutes than domestic partners are in harmony with observation in other countries. Generally the rate of the co-authored articles with non-academic partners is rather low. However it scatters to a great extent concerning the different universities. The presence or absence of medicine in the profile of the universities seems an important factor of that difference.

Keywords: Analysis, Authors, Bibliometrics, Care, Citation, Citations, Collaboration, Cooperation, Education, Health Care, Higher Education, Hungary, Indicators, Joint, Low, Medicine, Methodological Tools, Observation, Papers, Performance, Primary, Process, Profile, Publication, Publication Output, Publications, Research Collaboration, Researchers, Science, Scientometrics, Third Mission, Universities, University, Web of Science, Web-of-Science

# Title: Acta Orthopaedica

Full Journal Title: [Acta Orthopaedica](http://203.64.48.29/cgi-bin/er/browse.cgi?ccd=6LRoTi&o=e0&s=c-1-4424); [Acta Orthopaedica](http://taylorandfrancis.metapress.com/(y0wi13bczi2y0w55motajb55)/app/home/journal.asp?referrer=parent&backto=linkingpublicationresults,1:300377,1)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Seglen, P.O. (1998), Citation rates and journal impact factors are not suitable for evaluation of research. *Acta Orthopaedica*, **69** (3), 224-229.

Full Text: [1998\Act Ort69, 224.pdf](1998/Act%20Ort69,%20224.pdf)

Keywords: Bibliometric Indicators, Chance, Citation, Citedness, Evaluation, Field, Impact, Journal Impact Factors, Model, Publications, Research, Science, Tool

# Title: Acta Otorrinolaringológica Española

Full Journal Title: Acta Otorrinolaringológica Española

ISO Abbreviated Title:

JCR Abbr0001-6519eviated Title: Acta Otorrinolaringol Esp

ISSN:

Issues/Year:

Journal Country/Territory: Spain

Language: Spanish

Publisher: Editorial Garsi

Publisher Address:

Subject Categories:

: Impact Factor

? Suarez Nieto, C. (1993), The impact of Spanish otolaryngology on the international scientific community in 1981-1990. *Acta Otorrinolaringológica Española*, **44** (4), 273-276.

Abstract: The number of papers published by Spanish otolaryngologists, as well as the number of citations received in journals indexed in the Science Citation Index CD-ROM during 1981-1990, were studied. The survey revealed a total of 87 papers published, with 40 of them on basic research, and 195 citations. Finally, the need of a research development in this field is stressed.

Keywords: CD-ROM, Citations, Community, Development, Field, Impact, International, Journals, Papers, Research, Science Citation Index, Survey

# Title: Acta Paediatrica

Full Journal Title: [Acta Paediatrica](http://haly.ingentaselect.com/vl=4964193/cl=59/nw=1/rpsv/catchword/tandf/08035253/m_cp1-1.htm)

ISO Abbreviated Title: Acta Paediatr.

JCR Abbreviated Title: Acta Paediatr

ISSN: 0803-5253

Issues/Year: 12

Journal Country/Territory: Sweden

Language: English

Publisher: Scandinavian University Press

Publisher Address: PO Box 2959 Toyen, Journal Division Customer Service, N-0608 Oslo, Norway

Subject Categories:

Pediatrics: Impact Factor 1.582, 16/69 (2001)

? Bergkelly, K. (1995), Normative developmental behavior with implications for health and health promotion among adolescents: A Swedish cross-sectional survey. *Acta Paediatrica*, **84** (3), 278-288.

Abstract: I describe behavior with impact on health in adolescents against the background of characteristics of the Swedish society and analyse possible areas for improvement. A total of 4500 adolescents, aged 13-18 yr, in seven areas answered an anonymous questionnaire. Their socioeconomic backgrounds reflected mainstream adolescents. The response rate was 80-85%. Questions concerned health habits, exploratory behaviors regarding sexuality, use of alcohol and tobacco, problem behaviors, such as getting drunk, and life quality. There was very little experimentation with regard to health habits learned in childhood. Rapid adaptation to adult life-styles occurred, which was similar in both sexes in the younger age groups, but there were significant differences among older students. Alcohol use is of considerable concern. Adolescent prediction of future behavior indicated that negative behaviors require intervention. Parental influence on adolescent behavior needs to be explored. Peer groups could be an additional area for intervention.

Keywords: Adolescence, Alcohol, Gender, Health Habits, Life Quality, Public Health, Risk Behavior, Visual Analog Scale

? Zetterström, R. (1999), Impact factor and the future of *Acta Paediatrica* and other European medical journals. *Acta Paediatrica*, **88** (8), 793-796.

Full Text: [1999\Act Pae96, 793.pdf](1999/Act%20Pae96,%20793.pdf)

Abstract: Most European medical journals attain very low impact factors, as reported in Journal Citation Reports, and from the European point of view the depressing outlook is continually falling values. Among many reasons behind the low impact factor of European journals is citation bias as a consequence of the low prestige of European journals. In the case of Acta Paediatrica, which has published between 4 and 15 supplements annually during the period 1994-98, the low impact factor of the articles included in these supplements reduces the overall impact factor to less than half of what it would be had no supplements been published, i.e. from 1.88 to 0.81. It is obvious that by refusing to publish supplements the impact factor of Acta Paediatrica would be dramatically elevated. Some of the supplements, such as the one on persistent diarrhoeal disease which had to be reprinted as the original edition was sold out (1), are undoubtedly of great educational value and have an important role as sources of references. However, it is difficult for Acta Paediatrica to continue to publish supplements because of the load imposed on the impact factor of the journal. It is suggested that a scientific committee within the European Union seriously considers the importance of supporting European Biomedical Science, and that one way of doing so is to improve the prestige and quality of European journals.

Keywords: Bias, Citation, Citation Bias, European Union, Impact, Impact Factor, Impact Factors, Journal, Journal Citation Reports, Journals, Load, Medical, Medical Journals, Quality, Quality Of, Role, Sources, Value

Zetterström, R. (2002), Bibliometric data: A disaster for many non-American biomedical journals. *Acta Paediatrica*, **91** (10), 1020-1024.

Full Text: [2002\Act Pae91, 1020.pdf](2002/Act%20Pae91,%201020.pdf)

Abstract: Bibliometric data published by the Institute of Scientific Information in Philadelphia (ISI), and which was previously discussed in Acta Paediatrica, has increasingly been used despite all the relevant and severe criticism that has been raised against this method of evaluating individual research results and grading scientific journals. It is obvious that the present trend regarding the use of bibliometric data as a basis for priorities and funding of research and for the promotion of individual scientists favours American-oriented research projects at the expense of those that are based on concepts of predominantly European relevance.

Conclusion: For the future of non-American research, it is important that no single super-power, i.e. the USA, should dominate scientific priorities. The condition for efficient European competition is that European Centres with high levels of competence for creative research and training of scientists from all over the world are established. In addition, it is important that the results of European research are published in prestigious European journals, as was the situation before World War II.

Keywords: Acta P Ae Diatrica, Bibliometric, Bibliometric Data, Future of European Science, General Medical Journals, Impact Factor, Impact Factor, Journals, Research, Research Results, Scientific Evaluation, Scientific Journals, Scientific Rating

? Tov, A.B., Lubetzky, R., Mimouni, F.B., Alper, A. and Mandel, D. (2007), Trends in neonatology and pediatrics publications over the past 12 years. *Acta Paediatrica*, **96** (7), 1080-1082.

Full Text: [2007\Act Pae96, 1080.pdf](2007/Act%20Pae96,%201080.pdf)

Abstract: OBJECTIVE: To test the hypothesis that the number of publications in Neonatology and Pediatrics increases over time, and to verify whether the categories of publications all follow the same pattern over time. DESIGN AND SETTING: We evaluated all MEDLINE articles during 1994-2005. Search was limited to humans, English and to ‘newborn’ or ‘all-child’. We used regression analysis to determine the effect of year-of-publication upon the number-of-publications of each type. RESULTS: MEDLINE reported 36,141 publications in Neonatology and 169,823 in Pediatrics during the evaluation period. There was a significant linear increase in the number of publications in Neonatology and Pediatrics. There was a steady increase over time in Neonatology and in Pediatrics in meta-analyses, reviews and editorials. There was a steady decrease over time in letters in Neonatology, but no significant change in letters in Pediatrics. While there was no significant change in clinical trials (CTs), randomized control trials (RCTs) in Neonatology, there was a significant increase in CTs and RCTs in Pediatrics. CONCLUSIONS: The field of neonatology has not had a significant yearly increase of original studies, but has seen an increase of reviews, meta-analyses and editorials. This contrasts with Pediatrics, which shows a similar increase in reviews, meta-analyses and editorials, but also an increase in the number of CTs and RCTs and guidelines.

Keywords: Analysis, Clinical, Clinical Trials, Control, Design, Evaluation, Field, Guidelines, Humans, Newborn, Pattern, Pediatrics, Publications, Randomized, Regression, Regression Analysis, Reviews

# Title: Acta Paulista de Enfermagem

Full Journal Title: [Acta Paulista de Enfermagem](http://www.scielo.br/scielo.php/script_sci_serial/pid_0103-2100/lng_en/nrm_iso)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Fumincelli, L.F., Mazzo, A., da Silva, A.D.T., Pereira, B.J.D. and Mendes, I.A.C. (2011), Scientific literature on urinary elimination in Brazilian nursing journals. *Acta Paulista de Enfermagem*, **24** (1), 127-131.

Full Text: [2011\Act Pau Enf24, 127.pdf](2011/Act%20Pau%20Enf24,%20127.pdf)

Abstract: Objective: To assess the scientific literature on urinary elimination in nursing journals published in Brazil. Methods: An integrative literature review was used to review the databases MEDLINE, LILACS and Web of Science. The authors used 30 descriptors to search for articles published between the years 1999 to 2009, resulting in a total of 18 articles that met criteria and which were published by nurses. The papers were analyzed using a data collection instrument to identify journal name, year of publication, type of study, subject matter, and level of evidence. Results: Eighteen studies were classified as Level of Evidence IV; urinary incontinence was the most frequent theme in the articles analyzed. Conclusion: While the clinical practice of nurses was integrated into articles addressing changes in urinary elimination, we found that this topic was narrowly defined, studies used lower level research designs, and it was noted that few authors published on the topic. All of these findings indicate the importance of greater investment in nursing research in this area of nursing knowledge and practice.

Keywords: Authors, Brazil, Data Collection, Databases, Incontinence, Journal, Journals, Knowledge, Literature, Literature Review, Medline, Methods, Nurses, Nursing, Nursing Journals, Papers, Practice, Publication, Quality-of-Life, Research, Review, Review Literature, Science, Scientific and Technical Publications, Urinary Tract Physiological Phenomena, Web of Science, Women

? Ribeiro, R.P., Ribeiro, P.H.V., Marziale, M.H.P., Martins, M.B. and dos Santos, M.R. (2011), Obesity and stress among workers from different sectors of production: An integrative review. *Acta Paulista de Enfermagem*, **24** (4), 577-581.

Full Text: [2011\Act Pau Enf24, 577.pdf](2011/Act%20Pau%20Enf24,%20577.pdf)

Abstract: Objective: To identify the relationship between obesity and stress among workers in various sectors of production. Methods: This is a study conducted using the method of integrative literature review. To search for articles, we used the following databases: Medical Literature Analysis and Retrieval System Online (Medline), the Latin American and Caribbean Health Sciences (LILACS); Scientific Electronic Library Online (SciELO), Scopus; Web of Science (ISI). Descriptors used for this search were: obesity, occupational stress and workers. Results: Seven articles were included. Regarding the purpose of the study, the selected articles showed no significant relationship between obesity and stress. Conclusion: We reiterate the need for studies with more precise designs to show the relationship between obesity and stress of the worker.

Keywords: Body-Mass Index, Databases, Eating Behavior, Health, Integrative Review, ISI, Job Stress, Latin American, Literature, Literature Review, Male Japanese Workers, Medline, Methods, Obesity, Occupational, Occupational Health, Review, Scielo, Science, Scopus, Stress, Stress Occupacional, Web of Science, Women, Workers

? Cabral, D.B. and de Andrade, D. (2011), Nontuberculous mycobacteria in surgery: Challenges likely to be faced in Brazil? *Acta Paulista de Enfermagem*, **24** (5), 715-720.

Full Text: [2011\Act Pau Enf24, 715.pdf](2011/Act%20Pau%20Enf24,%20715.pdf)

Abstract: Infections caused by nontuberculous mycobacteria (MNT) represent an epidemiological and health emergency, especially in patients undergoing invasive procedures. Based on these, we aimed to analyze the scientific evidence, the scientific literature, on the occurrence in Brazil of MNT infections in surgical patients. We used as a research method integrative review of the literature using the databases Lilacs, Medline/Pubmed, ISI Web of Science and the Cochrane Library. We selected 15 publications on this theme from the last 30 years that were directed at methods of prevention and control, with a focus on post-discharge surveillance, the use of antibiotics and glutaraldehyde. Eye surgery, cosmetic, heart, laparoscopic and arthroscopic procedures were the most commonly investigated. The national situation of MNTs is concerning, especially when one recognizes the possibility of underreporting.

Keywords: Antibiotics, Brazil, Cochrane, Control, Databases, Emergency, Health, Integrative Review, ISI, ISI Web of Science, Keratitis, Lasik, Literature, Mycobacteria, Atypical, Mycobacterium Infections Atypical, Outbreak, Patients, Prevention, Prevention And Control, Publications, Research, Research Method, Review, Science, Scientific Literature, Surgery, Surgical, Surgical Procedures Operative, Surveillance, Web of Science, Web-of-Science, Wound-Infection

# Title: Acta Pharmaceutica Nordica

Full Journal Title: Acta Pharmaceutica Nordica

ISO Abbreviated Title: Acta Pharm. Nord.

JCR Abbreviated Title: Acta Pharm Nord

ISSN: 1100-1801

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Swedish Pharmaceutical PR, Stockholm

Publisher Address:

Subject Categories:

: Impact Factor

? Nikolaidis, E. (1990), Immunotoxicity of 2,3,7,8-tetrachlorodibenzo-para-dioxin and related polychlorinated aromatic-hydrocarbons in birds. *Acta Pharmaceutica Nordica*, **2** (2), 127-128.

# Title: Acta Pharmaceutica Suecica

Full Journal Title: Acta Pharmaceutica Suecica

ISO Abbreviated Title:

JCR Abbreviated Title: Acta Pharm Suec

ISSN: 0001-6675

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Swedish Pharmaceutical PR, Stockholm

Publisher Address:

Subject Categories:

: Impact Factor (2000)

? Hassoun, F.A.M. (1985), Teratogenicity and invitro fetal thymus toxicity of 2,3,7,8-tetrachlorodibenzo-para-dioxin and its congeners: Segregation with the AH locus. *Acta Pharmaceutica Suecica*, **22** (3), 175-176.

# Title: Acta Pharmacologica Sinica

Full Journal Title: Acta Pharmacologica Sinica

ISO Abbreviated Title: Acta Pharmacol. Sin.

JCR Abbreviated Title: Acta Pharmacol Sin

ISSN: 0253-9756

Issues/Year: 6

Journal Country/Territory: Peoples R China

Language: Multi-Language

Publisher: Acta Pharmacologica Sinica

Publisher Address: 294 Tai-Yuan Road, Shanghai 200031, Peoples R China

Subject Categories:

Chemistry: Impact Factor 0.196, 97/121 (1999); Impact Factor 0.631, / (2001)

Pharmacology & Pharmacy: Impact Factor 181 (2000); Impact Factor 0.631, / (2001)

? Fu, N.W., Guo, R., Yan, L.X., Huang, L. and Xu, H.J. (1991), Photodynamic therapy of zinc sulfonated phthalocyanine on murine transplanted tumors, its tissue distribution, and damaging effect on DNA of cancer cell. *Acta Pharmacologica Sinica*, **12** (5), 457-461.

Abstract: Zinc sulfonated phthalocyanine (ZnSPc) 10 mg. kg-1 was injected iv into mice bearing S-180 and RA795 lung carcinoma, after 24 h tumor site were irradiated with red light. In mice bearing S-180, tumor regression rate was 31.8-43.5%, tumor growth inhibition rate was 57.4%. The highest concentration was in tumor tissue 24 h after injection of this dye, on d 5 it still retained relatively highest concentration. However, in most other tissues the dye was not detected at this time, disappearance of ZnSPc from plasma was rapid, it showed an open two compartmentmodel, t1/2-alpha 135.8 min, t1/2-beta 70.1 h, V(d) 1.92×10-3 L. In blood, most ZnSPc was bound with plasma protein, the peak light absorption showed blue shift. ZnSPc 2.5 μg. ml-1 plus light, percent of DNA double strands greatly decreased, this indicated that DNA was one of target sites for ZnSPc photodynamic action.

Keywords: Zinc Sulfonated Phthalocyanine, Tissue Distribution, Sarcoma-180, Lung Neoplasms, Photochemotherapy

? Ding, Y., Huang, D.K. and Luo, J.P. (1995), A Simple Method for Estimating Half-Life of Drugs Obeying Michaelis-Menten Elimination Kinetics. *Acta Pharmacologica Sinica*, **16** (1), 65-67.

Abstract: AIM: To establish a simple method for estimating half-life of drugs obeying Michaelis Menten elimination kinetics. METHODS: A linear relationship is sketched between elimination half-life and drug concentration in blood that obey Michaelis-Menten elimination kinetics. A simple method is proposed to draw a regression line of blood drug concentration vs time after a single bolus intravenous injection. RESULTS & CONCLUSION: The elimination, half-life can be read from the gression line. The method can also be used to estimate the time required for the plasma concentration of a drug to decrease any fraction.

Keywords: Blood, Concentration, Drug, Drugs, Elimination, Fraction, Half-Life, Injection, Intravenous, Intravenous Injection, Kinetics, Linear, Mathematical Computing, Method, Methods, Pharmacokinetics, Plasma, Regression, Results, Time

# Title: Acta Physica et Chemica

Full Journal Title: Acta Physica et Chemica

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0001-6721

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Gyulai, J. (1967), Anon - Science Citation Index 1965. *Acta Physica et Chemica*, **13** (1-2), 93-&

Keywords: Citation, Science Citation Index

# Title: Acta Physico-Chimica Sinica

Full Journal Title: [Acta Physico-Chimica Sinica](http://www.whxb.pku.edu.cn/enindex.asp)

ISO Abbreviated Title: Acta Phys.-Chim. Sin.

JCR Abbreviated Title: Acta Phys-Chim Sin

ISSN: 1000-6818

ISSUES, Year: 12

Language: Chinese

Journal Country/Territory: Peoples R China

Publisher: Peking Univ Press

Publisher Address: Peking Univ, Chemistry Building, Beijing 100871, Peoples R China

Subject Categories: Chemistry, Physical

Impact Factor: 0.427 (2005)

? Liu, Z.C., Quan, X.C., Han, L.P. and Wang, J.L. (2000), Biodegradation kinetics of quinoline. *Acta Physico-Chimica Sinica*, **16** (7), 663-666.

Full Text: [2000\Act Phy-Chi Sin16, 663.pdf](2000/Act%20Phy-Chi%20Sin16,%20663.pdf)

Abstract: Study on quinoline biodegradation kinetics by pure cultures of B. P, sp,. kinetics constants of quinoline degradation were obtained. The effects of other substrates, for example, phenol, pyridine, nitrite, nitrate, ammonia and glucose, on the quinoline biotransformation by B, P, sp, were investigated. The effects of phenol and pyridine are inhibitive. Those of nitrate and glucose are enhanced.

Keywords: Activation, Ammonia, Biodegradation, Biotransformation, Degradation, Effects, Glucose, Inhibition, Kinetics, Mixed Substrates, Nitrate, Nitrite, Phenol, Quinoline

? Ling, L., Wang, X.X., Weng, H., Yang, Q. and Fu, X.Z. (2003), Modification of CoMo, TiO2-Al2O3 catalyst by gas phase fluorination. *Acta Physico-Chimica Sinica*, **19** (1), 70-74.

Full Text: [2003\Act Phy-Chi Sin19, 70.pdf](2003/Act%20Phy-Chi%20Sin19,%2070.pdf)

Abstract: The effect of support pre-fluorination on the physical properties and catalytic activity of MoCo, Al2O3-TiO2 was studied by XRD, N2 adsorption, and thiophene hydrodesulfurization (HDS). Freon (CFC-12). in wet air or in NH4F solution was used as fluorinating reagents. The influence of CFC-12 content, effect of fluorination temperature and fluorinating time on the structure and hydrodesulfurization activity of the catalysts were examined systematically. The results revealed that hydrodesulfurization activity of the catalyst fluorinated by 1% CFC-12 at 623 K was obviously improved with an increase of 20% similar to 30% as compared with that of the unfluorinated catalyst, the commercially available BY2 catalyst, and NH4F-fluorinated catalysts. Moreover, the catalyst fluorinated by the Freon gas presented excellent stability on catalytic activity and structure.

Keywords: Cobalt, Como, TiO2- Al2O3 Catalyst, Cumene Conversion, Fluoride, Freon, Gamma-Alumina Catalysts, Gas Phase Fluorination, Hydrodesulfurization Activity, Hydrodesulfurization (HDS), Hydrotreatment Catalysts, Molybdenum Additives, Surface-Acidity

? Nie, H.R., Liu, M.Z. and Chen, Z.B. (2004), Kinetic study on bio-degradation of carboxymethylcellulose hydrogel. *Acta Physico-Chimica Sinica*, **20** (4), 386-390.

Full Text: [2004\Act Phy-Chi Sin20, 386.pdf](2004/Act%20Phy-Chi%20Sin20,%20386.pdf)

Abstract: Carboxymethylcellulose (CMC) hydrogels have attracted attention as biodegradation absorbent materials in agriculture and forestry. It is important to investigate the biodegradation behavior and kinetics of the biodegradable reaction. In this paper, CMC hydrogel was prepared by crosslinking with aluminum chloride. The ef-fects of the substrate concentration, enzyme concentration and reaction temperature on the degradation rates were investigated. At the same time, the kinetics of the enzymatic degradation and the relationship between the apparent-activation energy and enzyme concentration were also discussed in detail. The results showed that the optimal temperature for the enzymatic reaction was 37 degreesC. The reaction orders for the substrate and enzyme were 1 and 1.2, respectively. A new kinetic model for CMC hydrogel heterogeneous degradation was proposed which was different from the, traditional Michaelis-Menten kinetics. The relationship between the apparent-activation energy and the enzyme concentration was also established.

Keywords: Absorbent, Agriculture, Aluminum, Attention, Behavior, Bio-Degradation, Biodegradable, Biodegradation, Carboxymethylcellulose, Carboxymethylcellulose (CMC), Cellulases, Cellulose, Chloride, Cmc, Concentration, Crosslinking, Degradation, Effects, Energy, Enzyme, Forestry, Heterogeneous, Hydrogel, Hydrogels, Hydrolysis, Kinetic, Kinetic Model, Kinetics, Materials, Model, Paper, Reaction, Substrate, Temperature

? Cao, J.L., Xing, D.Q., Liu, X.W. and Tan, Z.Y. (2007), Synthesis of magnetic 4A zeolite at ultrasonic condition. *Acta Physico-Chimica Sinica*, **23** (12), 1893-1898.

Full Text: [2007\Act Phy-Chi Sin23, 1893.pdf](2007/Act%20Phy-Chi%20Sin23,%201893.pdf)

Abstract: In order to solve the difficulty in separating powdery 4A zeolite from solution in application of 4A zeolite, a series of magnetic 4A zeolites with different Fe3O4 contents were synthesized by traditional hydrothermal method through ultrasonic crystallization for 6 It at 70°C after adding magnetic Fe,04 particulates to the crystallization solution for 4A zeolite synthesis. The products were characterized by X-ray diffraction (XRD), scanning electron rnicroscopy (SEM), IR, magnetic susceptibility, TG/DTA, EDX and ion exchange capability. The results showed that the magnetic 4A zeolite had good magnetism and its magnetic susceptibility increased with the Fe3O4 amount increasing. For adsorption of F- and Cr(VI) in water, the adsorption capability of magnetic 4A zeolite is equal with the pure 4A zeolite and the adsorption rate filled well the pseudo-second-order rate model.

Keywords: Adsorption, Hydrothermal Method, Ion Exchange, Ion-Exchange, Magnetic 4A Zeolite, Removal, Ultrasonic, X-Ray Diffraction, Zeolites

? Zhou, L.M., Wang, Y.P., Huang, Q.W. and Liu, Z.R. (2007), Adsorption properties of Cu2+, Cd2+ and Ni2+ by modified magnetic chitosan microspheres. *Acta Physico-Chimica Sinica*, **23** (12), 1979-1984.

Full Text: [2007\Act Phy-Chi Sin23, 1979.pdf](2007/Act%20Phy-Chi%20Sin23,%201979.pdf)

Abstract: Fe3O4/chitosan magnetic microspheres of 50 to 80 μm were prepared using the inverse phase emulsion dispersion and chemical crosslinking technology, and then modified with ethylenediamine for use in the adsorption of heavy metal ions. The adsorption properties of the modified Fe3O4/chitosan toward Cu2+, Cd2+ and Ni2+ were investigated. It was found that the adsorption capacities of Cu2+ and Ni2+ increased with pH, and a maximum adsorption for Cd2+ occurred at pH=3. The saturated adsorption capacities calculated by Langmuir isotherms were 54.3 mg g-1 for Cu2+, 20.4 mg g-1 for Cd2+, and 12.4 mg g-1 for Ni2+, respectively. The adsorption kinetics were well described by pseudo-second-order equation models. The experimental results showed that the Fe3O4/chitosan modified with ethylenediamine presented higher adsorption selectivity for Cu2+ than for Cd2+ and Ni2+ in all studied pH ranges.

Keywords: Adsorption, Adsorption Kinetics, Aqueous-Solutions, Binding, Cd(II), Cd2+, Chitosan, Crosslinking, Cu(II), Derivatives, Ethylenediamine, Heavy Metal, Heavy Metal Ions, Ions, Isotherms, Kinetic, Kinetics, Langmuir, Metal, Metal Ions, Ni(II), pH, Removal, Zeolites

? Xiao, G.Q., Me, X.L. and Xu, M.C. (2009), Adsorption performances for vanillin from aqueous solution by the hydrophobic-hydrophilic macroporous polydivinylbenzene/polyacrylethylenediamine IPN resin. *Acta Physico-Chimica Sinica*, **25** (1), 97-102.

Full Text: [2009\Act Phy-Chi Sin25, 97.pdf](2009/Act%20Phy-Chi%20Sin25,%2097.pdf)

Abstract: Hydrophobic-hydrophilic macroporous polydivinylbenzene/polyacrylethylenediamine interpenetrating polymer networks (PDVB/PAEM IPN) were prepared by the sequential suspension polymerization method. These were composed of two networks, of which one was hydrophobic (PDVB) and the other was hydrophilic (PAEM). The objective of this work was to study the adsorption thermodynamics and adsorption kinetics of this hydrophobic-hydrophilic IPN. The focus was on adsorption isotherms of vanillin at different temperatures, and these fit well into the Freundlich adsorption isotherm. The isosteric adsorption enthalpy, adsorption Gibbs free energies and the adsorption entropy could be calculated according to thermodynamic functions. The hydrophobic PDVB in the PDVB/PAEM IPN resin adsorbs through hydrophobic interaction while the hydrophilic PAEM adsorbs by hydrogen bonding. The adsorption kinetic data was fitted to the Lagergren pseudo second order rate equation. Intraparticle diffusion was the rate controlling step and could be described by HSDM model.

Keywords: Adsorption, Adsorption Isotherm, Adsorption Isotherms, Adsorption Kinetic, Adsorption Kinetics, Data, Diffusion, Freundlich, Freundlich Adsorption, Hydrogen, Hydrophobic, Hydrophobic-Hydrophilic, Interpenetrating Polymer Networks, Intraparticle Diffusion, Isotherm, Isotherms, Kinetic, Kinetics, Model, Networks, PDVB, PAEM IPN, Polymer, Polymerization, Pseudo Second Order, Pseudo-Second-Order, Resin, Second-Order, Thermodynamic, Thermodynamics, Vanillin

? Sun, X.L., Zeng, Q.X. and Feng, C.G. (2009), Adsorption kinetics of chromium(VI) onto an anion exchange fiber containing polyamine. *Acta Physico-Chimica Sinica*, **25** (10), 1951-1957.

Full Text: [2009\Act Phy-Chi Sin25, 1951.pdf](2009/Act%20Phy-Chi%20Sin25,%201951.pdf)

Abstract: An anion exchange fiber containing polyamine functional group was synthesized by chemical modification using polyacrylonitrile fiber as the raw material. The adsorption behavior of Cr(VI) using the self-made fiber was studied. Within the observed temperature and concentration range, equilibrium data for the adsorption of Cr(VI) from aqueous solutions by the fiber were obtained and correlated with Langmuir-type and Freundlich-type isotherm equations. The adsorption is shown to be a favorable type and the polyamine functional group has a strong affinity for Cr(VI). We mainly studied the adsorption kinetics of Cr(VI) onto the self-made fiber and fitted the kinetic data to the Lagergren first-order equation, the pseudo second-order equation, the modified pseudo first-order equation, and the intra-particle diffusion model. The respective characteristic rate constants were calculated and analyzed. Results show that the adsorption process is fast and that it reaches equilibrium at about 20 min. The experimental data for the adsorption systems fit well to a pseudo second-order equation and chemical adsorption is the main adsorption process. The fiber can be regenerated and repeatedly used for the adsorption of Cr(VI).

Keywords: Adsorption, Adsorption Behavior, Adsorption Kinetics, Anion Exchange Fiber, Aqueous Solutions, Aqueous-Solutions, Behavior, Carbons, Chemical, Chemical Modification, Chromium, Concentration, Cr(VI), Data, Diffusion, Diffusion Model, Equilibrium, Experimental, First Order, Functional Group, Intra Particle Diffusion, Intra-Particle Diffusion, Intraparticle Diffusion, Intraparticle Diffusion Model, Isotherm, Isotherm Equations, Kinetic, Kinetics, Model, Modification, Modified, Polyamine, Pseudo First Order, Pseudo First-Order, Pseudo Second Order, Pseudo Second-Order, Pseudo Second-Order Equation, Pseudo-First-Order, Pseudo-Second-Order, Rate Constant, Rate Constants, Removal, Second Order, Second-Order, Second-Order Equation, Solutions, Systems, Temperature, VI

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Full Text: [2010\Act Phy-Chi Sin26, 2890.pdf](2010/Act%20Phy-Chi%20Sin26,%202890.pdf)

Abstract: We investigated the adsorption of diclofenac (an anti. inflammatory drug) in aqueous solutions by magnetic multiwalled carbon nanotubes (MWCNTs). The results showed that the amount of adsorbed diclofenac initially increased with magnetic MWCNT dosage and stabilized at a magnetic MWCNT dosage of 0.7 g.L-1. The amount of diclofenac adsorbed by the magnetic MWCNTs was 33.37 mg.g-1 and the removal rate of diclofenac was 98.1%. The removal rate for the diclofenac increased and then decreased with the pH value of solution, but it decreased with the temperature of solution. Kinetic analysis was conducted using pseudo first and second order models. Regression results showed that the adsorption kinetics was more accurately represented by a pseudo second order model. The linear correlation coefficients and standard deviations of the Langmuir and Freundlich isotherms were determined and the results revealed that the Langmuir isotherm fit the experimental results well. The calculated thermodynamic parameters were: Δ*G*°<0 indicating that the adsorption of diclofenac on magnetic MWCNTs was spontaneous, Δ*H*°<0 indicating that the absorption reaction was exothermic and that low temperatures are favorable for adsorption, and Δ*S*°>0 indicating that the adsorption process was a entropy enhancing process.

Keywords: Absorption, Adsorption, Adsorption Kinetics, Analysis, Aqueous Solutions, Carbon, Carbon Nanotubes, Diclofenac, Dyes, Extraction, Freundlich, Isotherm, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir and Freundlich Isotherms, Langmuir Isotherm, Magnetic, Magnetic Multiwalled Carbon Nanotubes, Model, Models, Mwcnts, pH, Process, Pseudo Second Order, Pseudo-Second-Order, Regression, Removal, Second-Order, Surface, Temperature, Thermodynamic, Thermodynamic Parameters, Thermodynamics

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Keywords: Kinetics, Solutions

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Full Text: [A\Act Phy USSR12, 327.pdf](A/Act%20Phy%20USSR12,%20327.pdf)

Keywords: Ammonia, Iron, Kinetics, Synthesis

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Keywords: Ammonia, Decomposition, Iron, Kinetics

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Keywords: Hydrogen, Kinetics, Low Temperature, Oxidation

# Title: Acta Physiologica Academiae Scientiarum Hungaricae

Full Journal Title: Acta Physiologica Academiae Scientiarum Hungaricae

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

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Subject Categories:

: Impact Factor

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# Title: Acta Physiologica Scandinavica

Full Journal Title: [Acta Physiologica Scandinavica](http://www.blackwell-synergy.com/loi/aps)

ISO Abbreviated Title:

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Language:

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Full Text: [2001\Act Phy Sca171, 113.pdf](2001/Act%20Phy%20Sca171,%20113.pdf)

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Full Text: [2002\Act Phy Sca174, 87.pdf](2002/Act%20Phy%20Sca174,%2087.pdf)

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Full Text: [2003\Act Phy Sca177, 104.pdf](2003/Act%20Phy%20Sca177,%20104.pdf)

# Title: Acta Polymerica Sinica

Full Journal Title: [Acta Polymerica Sinica](http://www.gfzxb.org/)

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Language: Chinese

Publisher: Science China Press

Publisher Address: 16 Donghuangchenggen North St, Beijing 100717, Peoples R China

Subject Categories:

Polymer Science: Impact Factor 0.351 (2003); Impact Factor 0.431 (2004)

Chen, F., Luo, G.S. and Wang, Y.J. (2005), Studies on adsorption properties of chemically modified chitosan resins to diuretics. *Acta Polymerica Sinica*, (1), 53-59.

Full Text: [2005\Act Pol Sin1, 53.pdf](2005/Act%20Pol%20Sin1,%2053.pdf)

Abstract: Four types of chitosan beads, carboxylic chitosan (SUC-CS), benzoyl chitosan (BEN-CS), polyethyleneiminated chitosan (PEI-CS) and quaternaminated chitosan (QA-CS) were prepared using the wet phase-inversion method and chemical modification with the chemicals of succinic anhydride, benzoic anhydride, polyethyleneimine and 3-chloro-2-hydroxypropyltrimethyl ammonium chloride. Carboxyl, aromatic acyl, polyethyleneimine and quaternary ammonium groups were induced to chitosan chains, and their structure was characterized by FTIR spectra. The adsorption ability of the chemically modified chitosan resins to nine kinds of diuretics was investigated. The results show that, compared to the unmodified chitosan, the benzoyl chitosan has higher affinity and capacity to almost all the diuretics due to the hydrophobic interaction between chitosan and drug molecule, while the carboxyl chitosan has higher binding affinity only to the basic diuretics. The polyethyleneiminated chitosan has 48% similar to 209% higher capacity to the acidic diuretics due to the increased concentration of amino groups on its chain. The adsorption ability of quaternaminated chitosan for the diuretics with carboxyl group is greatly improved, especially for the bumetanide, which is above 2 times higher than the unmodified one because of the strong interaction of ion exchange.

Keywords: Chemical Modified Chitosan, Diuretics, Adsorption, Chromatography, Derivatives, Beads, Gel

Wang, X.J., Zhang, Q.X., Zhao, J.F., Xia, S.Q. and Chen, L. (2005), Adsorption of phenolic acids on a new type of amino modified polystyrene. *Acta Polymerica Sinica*, (1), 93-97.

Full Text: [2005\Act Pol Sin1, 93.pdf](2005/Act%20Pol%20Sin1,%2093.pdf)

Abstract: Amberlite XAD-4 polymeric resin was chemically modified with an amino group,which enables the resin (NDA-100) to be used directly without a wetting process. The adsorption thermodynamic and kinetic behaviors of phenol and p-hydroxybenzoic acid on NDA-100 were studied. A batch sorption experiments showed that NDA-100 resin had high sorption capacities for both phenolic acids. Equilibrium adsorption data fitted to both Langmuir and Freundlich isotherms in the studied concentration range. Adsorption was exothermic and basically of physical character. Kinetic analysis showed that the adsorption reaction could be approximated by a Lagergren pseudo-second-order-rate equation for which intraparticle diffusion was the essential rate-controlling step.

Keywords: Adsorption, Resin, Phenol, P-Hydroxybenzoic Acid, XAD-4

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Full Text: [2009\Act Pol Sin9, 909.pdf](2009/Act%20Pol%20Sin9,%20909.pdf)

Abstract: A post-crosslinked polymeric adsorbent was prepared by Friedel-Crafts reaction of the pendant vinyl groups. It was obvious that both the specific surface area and the pore volume of starting copolymers increased significantly after post-crosslinking. Nitrogen adsorption/desorption isotherms and pore size distribution curves revealed that the new pores of the resulted copolymers formed by post-crosslinking reaction were mainly micropores. The results of static adsorption indicated that the adsorbents sorption capability of phenol had been greatly improved after post-crosslinked while this phenomenon was not obvious to VB12. It could be attributed to the molecular size of VB12 which prevented VB12, diffusing from solution phase into the micropore region formed by post-crosslinking. PDT-55pc exhibited higher adsorption capacity of phenol than the commercial macroporous resin XAD-4. The adsorption capacity of VB12 onto adsorbent PDT-55 (polydivinylbenzene, toluene as porogen PDT-55pc post-crosslinking of PDT-55), PDH-55 (polydivinylbenzene, heptane and toluene as porogen) PDH-55pc post-crosslinking of PDH-55) was larger than that onto XAD-4. The equilibrium adsorption curves for resins adsorbed phenol and VB12, showed good agreement with the Langmuir and Freundlich isotherm equations. Correlation coefficients were larger than 0.99. Adsorption kinetic curves indicated that the time for adsorption equilibrium of phenol was shorter than that of VB12,. The kinetic data were then fitted to the pseudo-first order and pseudo-second order models. The results showed that phenol uptake onto adsorbents could be followed by the pseudo-second order model,while VB12, onto adsorbents would be more suitably represented by the pseudo-first order model.

Keywords: Acid, Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Adsorption Kinetic, Adsorption, Desorption, Capacity, Data, Distribution, Divinylbenzene Copolymers, Equilibrium, Freundlich, Freundlich Isotherm, Hypercrosslinked Polystyrene, Isotherm, Isotherm Equations, Isotherms, Kinetic, Langmuir, Macroporous, Model, Models, Nitrogen Sorption, Particles, Pendant Vinyl Groups, Pendant Vinyl Groups, Phenol, Polydivinylbenzene Copolymers, Polymeric, Polymeric Adsorbent, Pore Volume, Pore-Size Distribution, Porogen, Porosimetry, Porous Structure, Post-Crosslinking, Postcrosslinking, Pseudo First Order, Pseudo Second Order, Pseudo-First Order, Pseudo-First Order And Pseudo-Second Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second-Order, Resin, Resins, Size, Solution, Sorption, Specific Surface, Specific Surface Area, Surface, Surface Area, Toluene, Uptake, Volume, XAD-4

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Full Text: [2010\Act Pol Sin1, 96.pdf](2010/Act%20Pol%20Sin1,%2096.pdf)

Abstract: Tannic acid (TA) as a typical natural organic acid of high solubility, and medium molecular weight, was used to study the adsorption act and mechanism on a new hyper-crosslinked resin modified by amino function groups WJN-08. The adsorption isotherm data indicates that the equilibrium adsorption capacity of WJN-08 for TA is 15% higher than that of other commercial adsorbents. Moreover, the static adsorption assay indicates that the adsorption capacity for TA is related to the pore structure and the amounts of amino function groups of resin. The FTIR spectra of WJN-08 before and after adsorption of TA indicate that both “pi-conjugation pi” and electric attraction are the adsorption force during the adsorption process. The adsorption enthalpy changes ΔH of TA by WJN-08 is in a range from 20 to 22 kJ mol-1, which exhibit the adsorption is a chemical and endothermic process Batch kinetic studies indicate that the adsorption of TA on WJN-08 can be fitted by the membrane and intra-particle diffusion model. In particular, excellent adsorption and de-sorption performance of WJN-08 for TA is shown in dynamic column assay. The break though adsorption capacity is 19 56 mg g-1 and saturation adsorption capacity is 22. 43 mg g-1, respectivey, and the desorption rate of TA on WJN-08 is more than 98%.

Keywords: Adsorbents, Adsorption, Adsorption Capacity, Adsorption Enthalpy, Adsorption Isotherm, Capacity, Carbon, Changes, Chemical, Column, Data, Desorption, Diffusion, Diffusion Model, Dynamic, Endothermic, Enthalpy, Equilibrium, Force, Fractionation, FTIR, FTIR Spectra, Function, Intra-Particle Diffusion, Intraparticle Diffusion, Intraparticle Diffusion Model, Isotherm, Kinetic, Kinetic Studies, Mechanism, Membrane, Model, Modified, Natural, Organic, Organic Acid, Performance, Precursors, Range, Removal, Resin, Resin Modified by Amino Function Groups, Saturation, Solubility, Structure, Tannic Acid

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Full Text: [2010\Act Pol Sin11, 1262.pdf](2010/Act%20Pol%20Sin11,%201262.pdf)

Abstract: The adsorption of collagen on spin-coated poly(lactic acid) (PLA) surface was investigated using quartz crystal microbalance (QCM) The effects of concentration (0 similar to 9 25 mu g/mL) and temperature (10 similar to 50 degrees C) on adsorption were studied The results show that with the increasing concentration of collagen, the adsorption amount and initial adsorption rate on spin-coated PLA surface increases correspondingly Langmuir model and Freundlich model were applied for data fitting The isotherm equations q = 1169 0 99c/1 + 0 99c and q = 610c(1/3 79) were obtained It is found that Langmuir model described experiments better than the Freundlich model The kinetic experimental data were correlated with the Lagergren pseudo-first order kinetic model and the Lagergren pseudo-second order kinetic model It is shown that under low concentrations the Lagergren pseudo-first order kinetic model fits the results better and the Lagergren pseudo-second order kinetic fits the results better under high concentrations It means that the diffusion process is the rate-controlling step under low concentration and the interaction between collagen and PLA surface is the rate-controlling step under high concentrations The AFM Images show that the collagen adsorbed on PLA surface formed mesh-like structure The adsorption was significantly influenced by temperature changes in the adsorption buffer, indicating that the collagen is a kind of temperature-sensitive material The results also indicate that collagen denaturalizes gradually with increasing temperature in the range (10 similar to 40ºC) The adsorption quantity drops sharply when the temperature approaches (40 similar to 45ºC), 40ºC is the denaturizing temperature of collagen under present experimental conditions.

Keywords: Adhesion, Adsorption, Adsorption Rate, AFM, Bovine Serum-Albumin, Buffer, Changes, Collagen, Concentration, Data, Diffusion, Experimental, Experiments, Freundlich, Freundlich Model, Interaction, Isotherm, Isotherm Equations, Kinetic, Kinetic Model, Langmuir, Langmuir Model, Model, NOV, PLA, Poly(Lactic Acid), Protein, Pseudo First Order, Pseudo Second Order, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second-Order, QCM, Quartz, Quartz Crystal Microbalance, Structure, Surface, Temperature

# Title: Acta Polytechnica

Full Journal Title: Acta Polytechnica

ISO Abbreviated Title:

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Journal Country/Territory:

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Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Grünwald, A., Št’astný, B., Slavíčková, K. and Slavíček, M. (2002), Formation of haloforms during chlorination of natural waters. *Acta Polytechnica*, **42** (2), 56-59.

Full Text: [2002\Act Pol42, 56.pdf](2002/Act%20Pol42,%2056.pdf)

Abstract: Recent drinking water regulations have lowered the standards for disinfection by-products and have added new disinfection by-products for regulation. Natural organic matter (NOM), mainly humic compounds, plays a major role in the formation of undesirable organic by-products following disinfection of drinking water. Many disinfection by-products have adverse carcinogenic or mutagenic effects on human health. This paper deals with the formation potencial of disinfection by-products in water samples taken from different places in the Flaje catchment.

Keywords: Water, Chlorination, Disinfection By–Product Formation Potential

# Title: Acta Polytechnica Scandinavica-Chemistry Including Metallurgy Series

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ISSN:

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Publisher:

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Subject Categories:

: Impact Factor

? Marcusse, L. (1970), Adsorption kinetics. *Acta Polytechnica Scandinavica-Chemistry Including Metallurgy Series*, (94), 2-??.

# Title: Acta Psychiatrica Scandinavica

Full Journal Title: [Acta Psychiatrica Scandinavica](http://www.blackwell-synergy.com/servlet/useragent?func=showIssues&code=acp)

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Language: English

Publisher: Blackwell Munksgaard

Publisher Address: 35 Norre Sogade, PO Box 2148, DK-1016 Copenhagen, Denmark

Subject Categories:

Psychiatry: Impact Factor 2.259 / (2002)

? Eberhard-Gran, M., Eskild, A., Tambs, K., Opjordsmoen, S. and Samuelsen, S.O. (2001), Review of validation studies of the Edinburgh postnatal depression scale. *Acta Psychiatrica Scandinavica*, **104** (4), 243-249.

Full Text: [2001\Act Psy Sca104, 243.pdf](2001/Act%20Psy%20Sca104,%20243.pdf)

Abstract: Objective: To review validation studies of the Edinburgh Postnatal Depression Scale (EPDS). Method: A systematic search was performed in Medline and the Science Citation Index Expanded (ISI) from the period 1987-2000. For sensitivity and specificity of the EPDS presented in each study, 95% confidence intervals were estimated. Positive and negative predictive values were estimated assuming prevalences of postpartum depression ranging from 5% to 20%. Results: Eighteen validation studies were identified. The study design varied between studies. The sensitivity and specificity estimates also varied: 65-100% and 49-100%, respectively. The confidence intervals were estimated to be wide. Our estimates suggest a lower positive predictive value in a normal population than in the validation study samples. Conclusion: Most studies show a high sensitivity of the EPDS. Because of the differences in study design and large confidence intervals, uncertainty remains regarding the comparability between the sensitivity and specificity estimates of the different EPDS versions.

Keywords: Citation, Community Sample, Confidence Interval, Confidence Intervals, Depression, Disorders, EPDS, ISI, Mass Screening, Medline, Population, Post-Natal Depression, Postpartum Depression, Postpartum Depression, Predictive Value of Tests, Rationale, Science, Science Citation Index, Science Citation Index Expanded, Sensitivity and Specificity, Version, Women

? Hageman, I., Andersen, H.S. and Jorgensen, M.B. (2001), Post-traumatic stress disorder: A review, of psychobiology and pharmacotherapy. *Acta Psychiatrica Scandinavica*, **104** (6), 411-422.

Full Text: [2005\Act Psy Sca104, 411.pdf](2005/Act%20Psy%20Sca104,%20411.pdf)

Abstract: Objective: To review the literature on the psychobiology and pharmacotherapy of PTSD. Method: Relevant studies were identified by literature searches (Pubmed, web of science) and through reference lists. The search was ended by May 2001. Results: There is evidence of involvement of opioid, glutamatergic, GABAergic, noradrenergic, serotonergic and neuroendocrine pathways in the pathophysiology of PTSD. Medications shown to be effective in double-blind placebo-controlled trials includes selective serotonin reuptake inhibitors, reversible and irreversible MAO-inhibitors, tricyclic antidepressants and the anticonvulsant lamotrigine. Still more agents appear promising in open-label trials. Conclusion: The complexity of the psychobiology is reflected by the difficulties in treating the disorder. According to the present knowledge, suggestions for drug treatment of PTSD are made.

Keywords: Antidepressants, Combat Veterans, Cortisol, Disorder, Double-Blind, Drug, Hippocampal Volume, Inescapable Shock, Involvement, Knowledge, Literature, Noradrenaline, Open Trial, Opiate-Withdrawal, Opioid, Pharmacotherapy, PTSD, Pyramidal Neurons, Review, Science, Selective Serotonin Reuptake Inhibitors, Serotonin, Stress, Term Follow-up, Treatment, Vietnam Veterans, Web of Science, Withdrawal Symptoms

Bilsbury, C.D. and Richman, A. (2002), A staging approach to measuring patient-centred subjective outcomes. *Acta Psychiatrica Scandinavica*, **106** (S414), 5-40.

Full Text: [2002\Act Psy Sca106, 5.pdf](2002/Act%20Psy%20Sca106,%205.pdf)

Abstract: Introduction: In assessing clinical change, measurement is often based on psychometric scales. However, change is best revealed within the constellation of problems salient to the patient, rather than in alterations in the abstract constructs, psychometrically measured. These patients’ problems often serially unfold in qualitative stages, even before the full-blown disorder emerges. These qualitative stages constitute the natural history extending from early to late, fluctuating from mild to severe, and progressing from full-blown disorder to recovery.

Method: We reviewed the literature on clinimetrics and patient-centred subjective measures, and related these findings to the use of the discretized-analogue scaling method.

Results: There is increasing recognition of clinimetric approaches that structure the pre-clinical and clinical material into a scale that reflects the symptoms, consequences and complications in a manner understandable to the patient, and enabling the quantification of severity or change. This monograph provides criteria and methods for developing these building blocks that enable the assessment of severity, stage or change. We show examples of their use in quantitative clinical outcome measurement.

Conclusion: We encourage further studies in the ideology and procedures for measuring clinical change in terms of personally subjective experiences.

? Soldani, F., Ghaemi, S.N. and Baldessarini, R.J. (2005), Research reports on treatments for bipolar disorder: Preliminary assessment of methodological quality. *Acta Psychiatrica Scandinavica*, **112** (1), 72-74.

Full Text: [2005\Act Psy Sca112, 72.pdf](2005/Act%20Psy%20Sca112,%2072.pdf)

Abstract: Objective: To assess frequencies of types of publications about bipolar disorder (BD) and evaluate methodological quality of treatment studies. Method: We classified 100 randomly selected articles (1998-2002) from five psychiatric journals with highest impact ratings, by topic areas, and assessed methods employed in treatment studies. Results: Topics ranked: treatment (41%; 37% on pharmacotherapy) > biology (31%) > psychopathology (14%) = miscellaneous (14%). of treatment studies, only 19% of original articles were randomized, 15% were relatively large (n >= 50) but non-randomized, 65% were small non-randomized, case-series or -reports, and 53% relied on baseline-to-endpoint contrasts without a control group. Patient dropout rates were >= 40% in 43% of prospective studies. Only two reports provided confidence intervals; one included a power analysis, and 53% included no references on study design or statistical methods. Conclusion: Even in highly respected journals, the typical methodological quality of recent reports on therapeutics for BD was unexpectedly limited, and psychopathology and psychotherapies were little studied.

Keywords: Assessment, Bibliometrics, Biology, Bipolar Disorder, Case Series, Confidence Intervals, Control, Control Groups, Epidemiologic Research Design, Impact, Journal Article, Journals, Publications, Randomized Controlled Trials, Reproducibility of Results, Research, Statistical, Statistical Methods

? Sher, L. (2006), Alcoholism and suicidal behavior: A clinical overview. *Acta Psychiatrica Scandinavica*, **113** (1), 13-22.

Full Text: [2006\Act Psy Sca113, 13.pdf](2006/Act%20Psy%20Sca113,%2013.pdf)

Abstract: Objective: The purpose of this paper was to provide a clinical review of the literature on the relation of alcoholism to suicidal behavior. Method: Studies of alcoholism and suicidal behavior available in MEDLINE. Institute for Scientific Information Databases (Science Citation Index Expanded., Social Sciences Citation Index, and Arts & Humanities Citation Index), EMBASE, and Cochrane Library were identified and reviewed. Results: Alcoholism is associated with a considerable risk of suicidal behavior. Individuals with alcoholism who attempt or complete suicide are characterized by major depressive episodes, stressful life events, particularly interpersonal difficulties, poor social support, living alone, high aggression/impulsivity, negative affect, hopelessness, severe alcoholism. comorbid substance, especially cocaine abuse, serious medical illness, suicidal communication, and prior suicidal behavior. Partner-relationship disruptions are strongly associated with suicidal behavior in individuals with alcoholism. Conclusion: All individuals with alcoholism should receive a suicide risk assessment based on known risk factors.

Keywords: Abuse, Affect, Alcoholism, Assessment, Behavior, Citation, Clinical, Cocaine, Cocaine Abuse, Communication, Completed Suicide, Depressed-Patients, Events, Hopelessness, Illness, Institute for Scientific Information, Life, Life Events, Literature, Living, Major Depression, Medical, Medline, Mental-Disorders, National Comorbidity Survey, Negative Affect, Placebo-Controlled Trial, Psychiatric-Disorders, Purpose, Randomized Controlled-Trial, Review, Risk, Risk Assessment, Risk Factors, Science Citation Index, Social, Social Networks, Social Support, Stressful Life Events, Substance, Suicidal Behavior, Suicide, Support, United-States

? Nilsson, F.M. (2007), Mini Mental State Examination (MMSE) - probably one of the most cited papers in health science. *Acta Psychiatrica Scandinavica*, **116** (2), 156-157.

Full Text: [2007\Act Psy Sca116, 156.pdf](2007/Act%20Psy%20Sca116,%20156.pdf)

Keywords: Papers, Science

? Folstein, M.F., Folstein, S.E. and Mchugh, P.R. (2007), Mini Mental State Examination (MMSE) - probably one of the most cited papers in health science - Reply. *Acta Psychiatrica Scandinavica*, **116** (2), 157.

Full Text: [2007\Act Psy Sca116, 157.pdf](2007/Act%20Psy%20Sca116,%20157.pdf)

Keywords: Papers, Science

? Van den Eynde, F., Guillaume, S., Broadbent, H., Stahl, D., Campbell, I.C., Schmidt, U. and Tchanturia, K. (2011), Neurocognition in bulimic eating disorders: A systematic review. *Acta Psychiatrica Scandinavica*, **124** (2), 120-140.

Full Text: [2011\Act Psy Sca124, 120.pdf](2011/Act%20Psy%20Sca124,%20120.pdf)

Abstract: Objective: The aim of this study was to review the literature on neurocognition comparing people with a bulimic eating disorder in the acute phase of the illness with healthy controls (HC). Method: The review follows the PRISMA (preferred reporting items for systematic reviews and meta-analysis) statement guidelines. Three databases (Medline, Web of Science, and Scopus) were searched combining the search terms ‘bulimic disorder’, ‘bulimia nervosa (BN)’, ‘binge-eating disorder (BED)’ with terms referring to cognitive domains (e. g. ‘executive functions’). Results: Thirty-seven studies on people with BN and four on people with BED were selected for review. Overall, sample sizes were relatively small [bulimic disorders: median and range 22 (12-83); HC: 27 (13-172)]. The diversity in methodology precluded a meta-analytical approach. People with a bulimic disorder did not present with a clear neurocognitive profile. Inclusion of salient, disorder-related stimuli (e. g. body weight/shape words) in the neurocognitive paradigms tended to generate differences between people with a bulimic disorder and HC. Conclusion: Neurocognition in bulimic eating disorders is under researched, and the available evidence is inconclusive. This review outlines strategies for further research in this area.

Keywords: Anorexia-Nervosa, Binge-Eating Disorder, Bulimia Nervosa, Central Coherence, Cognition, Databases, Decision-Making, Disorder, Effect Sizes, Guidelines, Literature, Memory Bias, Meta-Analysis, Methodology, Neuropsychology, Performance, Profile, Quantitative Measure, Research, Review, Science, Scopus, Stroop Test, Systematic, Systematic Review, Systematic Reviews, Task, Web of Science, Women

# Title: Acta Radiologica

Full Journal Title: Acta Radiologica

ISO Abbreviated Title: Acta Radiol.

JCR Abbreviated Title: Acta Radiol

ISSN: 0284-1851

Issues/Year: 6

Journal Country/Territory: Sweden

Language: English

Publisher: Munksgaard Int Publ Ltd

Publisher Address: 35 Norre Sogade, PO Box 2148, DK-1016 Copenhagen, Denmark

Subject Categories:

Radiology, Nuclear Medicine & Medical Imaging: Impact Factor

? Seldinger, S.I. (1953), Catheter replacement of the needle in percutaneous arteriography: A new technique. *Acta Radiologica*, **39** (5), 368-376.

? Ueda, J., Kobayashi, Y., Kenko, Y., Koike, H., Kubo, T., Takano, Y. and Hara, K. (1988), Distribution of water, fat, and metals in normal liver and in liver metastases influencing attenuation on computed tomography. *Acta Radiologica*, **29** (1), 33-39.

Abstract: The quantity of water, lipid and some metals was measured in autopsy specimens of 8 normal livers, 9 livers with fatty change, and in 12 livers with metastases of various origins. These parameters contribute to the CT number measured in the liver. Water played a major role in demonstration of liver metastases as a low-density area on CT. Other contributory factors include iron, magnesium and zinc. Lipid and calcium had no influence in this respect. Heavy accumulation of calcium in a metastatic lesion gives a high-density area on CT. However, even when a metastatic lesion was perceived on CT as a low-density area, the calcium content of the lesion was not always lower than that of the non-tumour region.

? Honda, H., Onitsuka, H., Kanazawa, Y., Matsumata, T., Hayashi, T., Kaneko, K., Fukuya, T., Tateshi, Y., Adachi, E. and Masuda, K. (1995), MR imaging of hepatocellular carcinoma. Correlation of metal content and signal intensity. *Acta Radiologica*, **36** (2), 163-167.

Full Text: 1995\Act Rad36, 163.pdf

Abstract: In order to clarify the factors contributing to the signal intensities (SIs) of HCC on T1-weighted images, the amount of water, lipid, copper (Cu), iron (Fe), and manganese (Mn) was determined in HCC and surrounding hepatic parenchyma of 13 patients. The relationships among these findings, the histopathologic findings, and the SIs of T1-weighted images were evaluated. Among the 13 HCC, 3 had a high SI, 5 were isointense, and 5 had a low SI on T1-weighted images compared to the surrounding hepatic parenchyma. The paramagnetic ions which contributed to the SI patterns were assumed to be Cu in HCC (38.0±62.4 micrograms/g ww), and Fe in the liver (61.1±42.4 micrograms/g ww) and HCC (40.0±34.3 micrograms/g ww). In 8 HCC with high-or isointensity, 2 were grades, I., 5 were grade II, and one was grade III according to the Edmondson-Steiner’s histopathologic classification. It is concluded that the SI patterns alone can not be a sign of low grade malignancy because of the existence of Fe in livers and HCC.

? Hansen, J. and Jurik, A.G. (2009), Diagnostic Value of Multislice Computed tomography and magnetic resonance imaging in the diagnosis of retroperitoneal spread of testicular cancer: A literature review. *Acta Radiologica*, **50** (9), 1064-1070.

Full Text: [2009\Act Rad50, 1064.pdf](2009/Act%20Rad50,%201064.pdf)

Abstract: Testicular cancer is the most frequent malignant disorder in men aged 15-35 years. Generally, diagnosing and follow-up include computer tomography (CT) examinations to detect possible retroperitoneal spread (abdomen and pelvis), resulting in at least eight CT examinations. This patient group is thereby exposed to a non-neglectable radiation dose, increasing the risk of future radiation-induced secondary cancer. This is especially problematic in potentially surgically cured patients with stage I testicular cancer. Thus, it can be beneficial to substitute CT with magnetic resonance imaging (MRI), provided there is valid evidence that the diagnostic value of MRI is at least comparable to current multislice CT (MSCT). The purpose of this study was to analyze whether there is evidence to recommend a substitution of MSCT with MRI in the diagnosis of retroperitoneal spread of testicular cancer. A literature search on the diagnostic accuracy, specificity, and sensitivity of MSCT and MRI in the diagnosis of retroperitoneal spread of testicular cancer was performed in the following databases: PubMed, EmBase, and ISI Web of Science. The search was limited to include the period from 2000 to September 2008, and to human and English-language publications. Forty-four publications were obtained for formal review (27 from PubMed, 15 from EmBase, two from ISI Web of Science). None of the publications reviewed encompassed diagnostic specificity and sensitivity of MSCT, and they lacked systematic comparison of MSCT and MRI. Only one study included sensitivity and specificity of MRI compared to single-slice CT. Both methods had a sensitivity and a specificity of approximately 70%. The literature review did not reveal valid data regarding diagnostic accuracy of MRI compared with MSCT for diagnosing retroperitoneal spread of testicular cancer. A prospective blinded comparative study is needed to provide valid evidence.

Keywords: Accuracy, Aged, Cancer, Chemotherapy, Comparative Study, CT, Databases, Diagnosis, Disorder, FDG-PET, Fine-Needle-Aspiration, Follow-up, Germ-Cell Tumors, Human, Imaging, ISI, Literature, Literature Review, Lymph-Node, Magnetic Resonance Imaging, Magnetic Resonance Imaging (MRI), MRI, Multislice Computed Tomography (MSCT), Positron-Emission-Tomography, Publications, Pubmed, Residual Masses, Review, Risk, Science, Seminoma, Sensitivity And Specificity, Systematic, Testicular Cancer, Urological Tumors, Web of Science

# Title: Acta Scientiae Circumstantiae

Full Journal Title: [Acta Scientiae Circumstantiae](http://www.ilib.cn/P-QCode~hjkxxb.html)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lin, C.Y. and Li, L. (2003), Kinetics of phenol sorption to organobentonite from water. *Acta Scientiae Circumstantiae*, **23** (6), 738-741.

Full Text: [2003\Act Sci Cir23, 738.pdf](2003/Act%20Sci%20Cir23,%20738.pdf)

? Chen, C. and Wang, J.L. (2007), Biosorption of heavy metal ions by a brewery’s waste: Kinetic and equilibrium. *Acta Scientiae Circumstantiae*, **27** (4), 544-553.

Full Text: [2007\Act Sci Cir27, 544.pdf](2007/Act%20Sci%20Cir27,%20544.pdf)

? Zhang, D.M., Gao, J., Sun, J., Zhong, K.D., Feng, M., Liu, X.Y. and Gong, R.M. (2008), Sorption behavior of copper ion and Malachite green on phosphoric acid esterified soybean hull. *Acta Scientiae Circumstantiae*, **28** (4), 720-725.

Full Text: [2008\Act Sci Cir28, 720.pdf](2008/Act%20Sci%20Cir28,%20720.pdf)

# Title: Acta Scientiarum Biological Sciences

Full Journal Title: [Acta Scientiarum Biological Sciences](http://www.periodicos.uem.br/ojs/index.php/ActaSciBiolSci/index)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1679-9283

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lima-Ribeiro, M.d.S., Nabout, J.C., Pinto, M.P., de Moura, I.O., de Melo, T.L., Costa, S.S. and Valle de Britto Rangel, T.F.L. (2007), Scientometric analysis in population ecology: Importance and trends over the last 60 years. *Acta Scientiarum Biological Sciences*, **29** (1), 39-47.

Full Text: [2007\Act Sci Bio Sci29, 39.pdf](2007/Act%20Sci%20Bio%20Sci29,%2039.pdf)

Abstract: The aim of this paper was to carry out a scientometric analysis in population ecology. We seek to understand the importance and trends of that Population ecology field throughout years, connecting them with the principal geopolitical regions around the world. To that end, a bibliographic Survey at Thomson ISI web site was carried out, at the period between 1942 and 2005, using the key-word “population ecology”. Data showed an exponential growth in the number of publications on population ecology, most of them developed in USA and Europe and publicized in ecological journals of wide international distribution and high Citation Index. A Principal Component Analysis (PCA) showed distinct temporal trends in population ecology researche, leading to more recent decades (1990 and 2000, until 2005) a great variety of organisms studied and related with other ecology fields (conservation biology and community ecology) and natural sciences (biogeography, genetics, evolution, epidermiology and demography). These results contrast with the scientific stagnation widely criticized in ecology and indicate the progress of the Population ecology as science, persuing new horizons as well as new paradigms, laws, theories and principles that might be useful to the society.

Keywords: Analysis, Biogeography, Biology, Community, Conservation, Conservation Biology, Demography, Distribution, Ecology, Europe, Evolution, Field, Genetics, Growth, International, ISI, Journals, Laws, PCA, Population, Population Ecology, Principles, Publications, Science, Sciences, Scientometric, Site, Society, Temporal, Trends, USA, Web, World

# Title: Acta Scientiarum Naturalium Universitatis Pekinensis

Full Journal Title: Acta Scientiarum Naturalium Universitatis Pekinensis

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Liu, X.P. and Zhou, H. (2007), Statistical analysis on the SCI papers of Peking University in 2005. *Acta Scientiarum Naturalium Universitatis Pekinensis*, **43** (5), 723-727.

Full Text: [2007\Act Sci Nat Uni Pek43, 723.pdf](2007/Act%20Sci%20Nat%20Uni%20Pek43,%20723.pdf)

Abstract: In 2005, scientists of Peking University, as primary authors, published 2009 SCI papers in 772 kinds of journals, including lots of top journals in different fields. Average impact factor of these papers is 2.103, which is obviously higher than that in 2004. SCI papers of Peking University in 2005 are analyzed, and suggestions are given on current problems and improvement in the future.

Keywords: SCI Papers, Statistical Analysis, Impact Factor, Cited Times

# Title: Acta Scientiarum Naturallum (Universitatis Nakaiensis)

Full Journal Title: [Acta Scientiarum Naturallum (Universitatis Nakaiensis)](http://e32.cnki.net/KNS50/Navi/item.aspx?NaviID=1&BaseID=NKDZ&NaviLink=%e5%8d%97%e5%bc%80%e5%a4%a7%e5%ad%a6%e5%ad%a6%e6%8a%a5(%e8%87%aa%e7%84%b6%e7%a7%91%e5%ad%a6%e7%89%88))

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0465-7942

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Fan, Y.G., Shi, R.F., Yang, Y.Z. and Shi, Z.Q. (2006), Synthesis of oxidized piperidinyl polystyrene resin and its adsorption property for phenol. *Acta Scientiarum Naturallum (Universitatis Nakaiensis)*, **39** (2), 85-88.

Full Text: [2006\Act Sci Na39, 85.pdf](2006/Act%20Sci%20Na39,%2085.pdf)

Abstract: The piperidinyl and oxidized piperidinyl polystyrene resin were synthesized. Adsorption properties for phenol in aqueous solution and cyclohexane of the resins were measured by the adsorption isotherms and the kinetic curve. The result showed that adsorption capacities of the oxidized piperidinyl resin were larger than those of piperidinyl resin. A pseudo-second-order equation was used to interpret the kinetic curve and the correlation is good. Qe value calculated from the equation matched well with the experim

Keywords: Oxidized Piperidinyl Polystyrene Resin, Phenol, Cyclohexane, Adsorption Isotherm, Pseudo-Second-Order Kinetic Equation

# Title: Acta Societatis Ophthalmologicae Sinicae

Full Journal Title: [Acta Societatis Ophthalmologicae Sinicae](http://www.ceps.com.tw/ec/ecJnlIntro.aspx?Jnliid=3185)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1021-3120

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Tsai, C.L., Wang, M.H. and Ho, Y.S. (2008), Bibliometric analysis of cataract research from 1991 through 2006, analyzed with the Science Citation Index. *Acta Societatis Ophthalmologicae Sinicae*, **47** (2), 101-111.

Full Text: [2008\Act Soc Oph Sin47, 101.pdf](2008/Act%20Soc%20Oph%20Sin47,%20101.pdf)

Abstract: Objective: The purpose of the study is to investigate the quantity and quality of studies on cataract in the category of ophthalmology to provide valuable information for future cataract-related research and aid researchers to focus their research findings on a specific subject.

Methods: A bibliometric analysis based on the *Science Citation Index* (SCI) distributed by the Institute of Scientific Information (*ISI*) was conducted on cataract-related studies published between 1991 and 2005 in ophthalmology field based on year of publication, authorship, international collaborations, and keyword trends. 8,186 articles of 41 journals were analyzed totally.

Results: Among the 8,186 articles, Journal articles were the most frequent document type. English was the dominant language of most publication in the subject category of ophthalmology. *Journal of Cataract and Refractive Surgery* accounts for mostly published papers on cataract. USA is the most popular international collaborator and single country publication in various research fields. Dr. R. Menapace at the University of Vienna in Austria was the highest contributing author. The average number of authors per article, from 1991 to 2005, was 4.5. Additionally, the most frequently used keyword was ‘cataract’ which was used in 729 articles followed by ‘cataract surgery’.

Conclusion: Cataract studies in the *ISI* subject categories of ophthalmology have tripled and steadily increasing trend was noticed during the last 15 years. The top-ranking countries in terms of number of articles published were the United States. Scientists from Japan were ranked as the most prolific first author and corresponding author the top three most frequently used author keyword were ‘cataract’, ‘cataract surgery’, and ‘phacoemulsification’. In non-cataract related keywords, glaucoma was the most frequently used one.The top journal with the most articles addressing cataract research was *Journal of Cataract and Refractive Surgery*.

Keywords: Cataract, Scientometrics, SCI, Cataract Surgery, Phacoemulsification

# Title: Acta Sociologica

Full Journal Title: [Acta Sociologica](http://ca2.csa.com/ids70/browse_toc.php?SID=3c5356efe6ea3d2857d04d61cacc7b9b&db=sagesoc-set-c&docid=sage-set-c%2FASJ_2005_48_4_cln3.wais+0+sagesoc-set-c); [Acta Sociologica](http://weblinks2.epnet.com/authHjafDetail.asp?tb=1&_ua=bo+B%5F+db+buhjnh+bt+TD++%22ACT%22+CB8F&_ug=sid+2220A5CD%2D917B%2D46E3%2D9A1A%2DAC75BC8A3AA8%40sessionmgr2+dbs+buh+4C99&_us=sm+ES+E6C7&_uso=st%5B0+%2DTD++%22ACT%22+tg%5B0+%2D+db%5B0+%2Dbuh+op%5B0+%2D+h)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Bjarnason, T. and Sigfusdottir, I.D. (2002), Nordic impact: Article productivity and citation patterns in sixteen Nordic sociology departments. *Acta Sociologica*, **45** (4), 253-267.

Full Text: [2002\Act Soc45, 253.pdf](2002/Act%20Soc45,%20253.pdf)

Abstract: The sociology departments in the Nordic countries provide the institutional platform for *Nordic Sociology* and for the Nordic national sociological associations that form the Scandinavian Sociological Association. This paper focuses on journal articles produced by current (as of 1 January 2001) faculty of 16 of these Nordic Sociology departments in the period 1981-2000. First, we provide a brief overview of article productivity and citations to articles produced in this period by country and department. Second, we estimate a multilevel model of citation patterns by articles published, the academic position and productivity of each author, and the structure and productivity of each department as a whole. Third, we test the extent to which the effects of such factors differ between departments and individuals. In all departments, publications in high-impact journals increase the number of citations to any given article, to other work of the same author, and to the work of other faculty in the department. The effect of publishing in high-impact journals differs significantly between individual authors, and work in certain types of journals yields more citations than the journal impact factor would predict. We argue that departmental affiliations with outside faculty and departmental productivity can be seen as a form of social capital that benefits both individuals and departments as a whole. These findings strongly suggest that diversity is a defining characteristic of this sociological community, precluding monolithic definitions of Nordic sociology.

# Title: Acta Stomatologica Croatica

Full Journal Title: [Acta Stomatologica Croatica](http://www.kbd.hr/hsd/ascro/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bacic, M., Kaic, Z. and Keros, J. (1996), Bibliometric quantitative and qualitative analysis of the journal *Acta Stomatologica Croatica* in the period 1985-1991. *Acta Stomatologica Croatica*, **30** (4), 239-247.

Full Text: Act Sto Cro30, 239.pdf

Abstract: The study contains a bibliometric quantitative and qualitative analysis of the journal Acta Stomatologica Croatica, based on twenty-five parameters, over a period of seven years. The analysis resulted in a large number of data, which is an indicator of scientific, professional and educational work in the field of dental medicine in Croatia. The authors consider that the obtained data will contribute to the quality of Croatian scientific publications, including the journal Acta Stomatologica Croatica.

? Borić, V. (2006), Bibliometric analysis of the articles from the School of Dental Medicine, University of Zagreb, indexed in Web of Science database (1976-2005). *Acta Stomatologica Croatica*, **40** (3), 218-235.

Full Text: [2006\Act Sto Cro40, 218.pdf](2006/Act%20Sto%20Cro40,%20218.pdf)

Abstracts: This article represents bibliometric analysis of published articles with the address of the School of Dental Medicine, University of Zagreb, indexed in Web of Science database in the period 1976-2005. The sample consisted of 428 articles that were analyzed according to the authors’ address, productivity markers (authors, institutions, year of publication, article type, language, journal) and citation. The analysis of the structure showed that the University of Zagreb affi liation was mentioned in 87.7% of the addresses, and School of Dental Medicine affi liation in 98.8% of the addresses, in 13 different ways. Most publications (82.5%) are scientifi c articles, 15.2% are congress abstracts, while reviews, short communications, letters, and book reviews and personal articles are present in less that 1%. The articles were published in 88 different journals, mostly in Coll Antropol (39.9%). According to the JCR database, the journals are from 31 different scientifi c areas. Although most of the publications (24) are from the fi eld of Dentistry, Oral Surgery & Medicine, the greatest number of articles is published in two journals from the fi eld of Anthropology. There are 1866 authors of 428 articles, mostly with four authors (23.8%); greatest number of authors being eleven. Mean number of authors per article is 4.4. Collaboration inside the School yielded 45.1% of the articles; slightly more in collaboration with the authors form other Croatian institution (47.4%), and 6.1% in collaboration with foreign authors. The analysis showed that 41.1% of the articles has no citation; the most cited article has 54 citations, mean citation being 2.68 per article. Out of the ten most cited articles, two are published in collaboration with foreign authors, one is a result of collaboration inside the School, and six are result of collaboration with the scientists from the Institute Ruđer Bošković.

Keywords: Bibliometrics, Authorship, Productivity, School of Dental Medicine University of Zagreb

? Borić, V. and Strujić, M. (2006), Bibliometric analysis of *Acta Stomatologica Croatica*: 1987-2006. *Acta Stomatologica Croatica*, **40** (4), 336-346.

Full Text: [2006\Act Sto Cro40, 336.pdf](2006/Act%20Sto%20Cro40,%20336.pdf)

Abstracts: This article presents a bibliometrical analysis of the journal Acta Stomatologica Croatica from 1987 until 2006. The sample consists of 711 articles, categorized as original scientific articles, preliminary publications, reviews, professional papers, editorials, congress presentations, case reports, and one bibliography. The analysis included publications (according to number, type, language and number of pages), authors (institutional affiliation and country of origin), used bibliographical citations (references, according to type and date of used data) and independent citations and self-citations. The analyis of the number of articles shows that most articles are original scientific works (62.2%). Out of the total number of the articles between 1987 and 1997, 46.7% was published in Croatian, 8.6% in English. Since 1998 all articles were published bilingually (44.7%). Analyzed articles cite a total of 16597 articles, giving a mean of 23.3 references per article. Most references are from foreign journals (76.9%), then from foreign books (10.8%), articles from Croatian journals (6.1%), Croatian books (5.8%), electronic data (0.3%), and other sources (0.1%). 30% of references were published in the last five years. The share of independent citations is 94.1%, giving a mean 22 independent references per article. Mean number of authors is 3.3, maximum being 9; the articles with three authors have the highest percentage (23.1%). The addresses of clinical institutions are most frequent (84), followed by scientific and educational and other (20), and scientific ones (9). Authors from 35 countries have published their work in the analyzed journal during the observed period.

Keywords: Bibliometrics, Journals, Publishing

? Borić, V. (2008), Citation analysis of the papers’ published in *Acta Stomatologica Croatica* using Web of Science database. *Acta Stomatologica Croatica*, **42** (2), 123-139.

Full Text: [2008\Act Sto Cro42, 123.pdf](2008/Act%20Sto%20Cro42,%20123.pdf)

Abstracts: Bibliometric analysis of the journal Acta stomatologica Croatica (ASCRO) was made for the period of 1966-2006. Purpose: The research was to determine a degree of communicability of the journal, i.e. the influence of the papers published in the journal on the other papers and scientists. Materials and Methods: Citation analysis was conducted on a specimen acquired by browsing the Web of Science (WoS) databases and the data were processed by descriptive statistics. Results: The 185 papers with a total of 257 citations were singled out by a search. Each of the cited papers has an average of 1,4 citations. If we know that a total of 1.273 papers have been published in the journal, each paper has been cited 0,2 times on average. An analysis of the errors has shown that in 50,2% of papers all the elements of the bibliographic record have been cited correctly and a total of 163 citation errors have been made. Most of the errors (65%) are present in the title of the journal. The highest number of citations per paper is 5. The highest number of citations per year is 28, in the year 1991. The division of the citations by age of the paper shows that a maximum of 9,3% citations has been accomplished in the 3rd year of publishing the paper, after which the number of citations has decreased. ASCRO has been cited in 65 journals, mostly (44,7%) in Coll. Antropol. A total of 60,7% self-citations has been registered and 21% of the citations have been quoted by foreign authors only. Conclusions: It is fi nally possible to determine that we should not be content with the present level of infl uence of ASCRO to the domestic and foreign scientifi c community. The analysis shows a relatively modest total number of citations, a large number of self-citation and a small share of the foreign authors’ citations which doesn’t contribute to the communicability of the journal on the worldwide level. Excellence needs to be set as a general goal. In order to achieve that, the level of quality of all of its segments needs to be elevated in a complex process of publishing a scientific journal, especially excellence of published papers.

Keywords: Periodicals as Topic, Bibliometrics, Citation Analysis, Self-Citations

# Title: Acta Tropica

Full Journal Title: [Acta Tropica](http://www.sciencedirect.com/science/journal/0001706X)

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Parasitology Tropical Medicine: Impact Factor

? Falagas, M.E., Karavasiou, A.I. and Bliziotis, I.A. (2006), A bibliometric analysis of global trends of research productivity in tropical medicine. *Acta Tropica*, **99** (2-3), 155-159.

Full Text: [2006\Act Tro99, 155.pdf](2006/Act%20Tro99,%20155.pdf)

Abstract: The field of tropical medicine has a long history due to the significance of the relevant diseases for the humanity. We estimated the contribution of different world regions to research published in the main journals of tropical medicine. Using the PubMed and the Institute for Scientific Information (ISI) ‘Web of Science’ databases, we retrieved articles from 12 journals included in the ‘Tropical Medicine’ category of the ‘Journal Citation Reports’ database of ISI for the period 1995–2003. Data on the country of origin of the research were available for 11,860 articles in PubMed (98.1% of all articles from the tropical medicine category). The contribution of different world regions during the studied period, as estimated by the location of the affiliation of the first author, was: Western Europe 22.7%, Africa 20.9%, Latin America and the Caribbean 20.7%, Asia (excluding Japan) 19.8%, USA 10.6%, Oceania 2.1%, Japan 1.5%, Eastern Europe 1.3%, and Canada 0.6%. The contribution of regions, estimated by the location of the affiliation of at least one author of the published papers (retrieved from the ISI database), was similar: Western Europe 36.6%, Africa 27.7%, Latin America and the Caribbean 24.4%, and Asia 23.3%. The mean impact factor of articles published in tropical medicine journals was highest for the USA (1.65). Our analysis suggests that the developing areas of the world produce a considerable amount of research in tropical medicine; however, given the specific geographic distribution of tropical diseases they probably still need help by the developed nations to produce more research in this field.

Keywords: 10 : 90 GAP, Africa, Analysis, Articles, Asia, Bibliometric, Bibliometric Analysis, Bibliometrics, Canada, Caribbean, Countries, Databases, Diseases, Distribution, Eastern Europe, Europe, Global, History, Impact, Impact Factor, Indexes, Institute for Scientific Information, International Representation, ISI, Japan, Journals, Latin America, Location, Medicine, Productivity, Publication, Research, Research and Development, Research Collaboration, Research Productivity, Science, Trends, Tropical Medicine Literature, USA, World

Dance, D.A.B. (2000), Ecology of Burkholderia pseudomallei and the interactions between environmental *Burkholderia* spp. and human-animal hosts. *Acta Tropica*, **74** (2-3), 159-168.

Full Text: [A\Act Tro74, 159.pdf](A/Act%20Tro74,%20159.pdf)

Abstract: Early workers thought that melioidosis was a zoonosis with a reservoir in rodents, but we now know that Burkholderia pseudomallei is a widely distributed environmental saprophyte. In northeast Thailand, two thirds of paddy fields yield the organism, and 80% of children have antibodies by the time they are 4 years old. However, interpretation of these results has been complicated by the recent recognition of avirulent, antigenically cross-reacting environmental organisms for which the name B. thailandensis has been proposed. We still know very little about the climatic, physical, chemical and biological factors which control the proliferation and survival of Burkholderia spp. in the environment, although epidemiological studies show space-time clustering of melioidosis. It is assumed that most human and animal melioidosis arises through exposure to contaminated soil or muddy water, although only 6% of human cases have a clear history of inoculation, and a further 0.5% of cases follow near-drowning. Laboratory animals have also been infected by ingestion, inhalation and insect bites, but evidence of infection acquired naturally by these routes remains anecdotal. Sporadic cases have resulted from iatrogenic inoculation, laboratory accidents, and person-to-person or animal-to-person spread. Whether exposure to B. pseudomallei will result in disease probably depends on the balance between the virulence of the strain, the immune status of the host (e.g. diabetes mellitus) and the size of the inoculum.

Keywords: *Pseudomonas-Pseudomallei*, Culture Techniques, Melioidosis, Soil, Thailand, Survival, Burkholderia Pseudomallei, Human-Animal Hosts, Ecology

? Falagas, M.E., Karavasiou, A.I. and Bliziotis, I.A. (2006), A bibliometric analysis of global trends of research productivity in tropical medicine. *Acta Tropica*, **99** (2-3), 155-159.

Full Text: [2006\Act Tro99, 155.pdf](2006/Act%20Tro99,%20155.pdf)

Abstract: The field of tropical medicine has a long history due to the significance of the relevant diseases for the humanity. We estimated the contribution of different world regions to research published in the main journals of tropical medicine. Using the PubMed and the Institute for Scientific Information (ISI) “Web of Science” databases, we retrieved articles from 12 journals included in the “Tropical Medicine” category of the “Journal Citation Reports” database of ISI for the period 1995–2003. Data on the country of origin of the research were available for 11,860 articles in PubMed (98.1% of all articles from the tropical medicine category). The contribution of different world regions during the studied period, as estimated by the location of the affiliation of the first author, was: Western Europe 22.7%, Africa 20.9%, Latin America and the Caribbean 20.7%, Asia (excluding Japan) 19.8%, USA 10.6%, Oceania 2.1%, Japan 1.5%, Eastern Europe 1.3%, and Canada 0.6%. The contribution of regions, estimated by the location of the affiliation of at least one author of the published papers (retrieved from the ISI database), was similar: Western Europe 36.6%, Africa 27.7%, Latin America and the Caribbean 24.4%, and Asia 23.3%. The mean impact factor of articles published in tropical medicine journals was highest for the USA (1.65). Our analysis suggests that the developing areas of the world produce a considerable amount of research in tropical medicine; however, given the specific geographic distribution of tropical diseases they probably still need help by the developed nations to produce more research in this field.

Keywords: 10:90 Gap, Articles, Bibliometric, Bibliometric Analysis, Bibliometrics, Citation, Countries, Database, Databases, Diseases, Eastern Europe, Europe, History, Impact, Impact Factor, Indexes, International Representation, Journals, Latin America, Papers, Productivity, Publication, Pubmed, Research, Research And Development, Research Collaboration, Research Productivity, Science, Trends, Tropical Medicine Literature, World

? Lewison, G. and Srivastava, D. (2008), Malaria research, 1980-2004, and the burden of disease. *Acta Tropica*, **106** (2), 96-103.

Full Text: [2008\Act Tro106, 96.pdf](2008/Act%20Tro106,%2096.pdf)

Abstract: Malaria is estimated to cause about 1.6% of the 57 million deaths occurring annually and 2.3% of the disease burden. However, it accounts for only about 0.4% of world biomedical research, and this percentage is barely changing. Most of the research takes place in Europe and North America, which are little affected directly by the disease, 90% of whose burden occurs in sub-Saharan Africa. Research includes both pharmaceutical and non-pharmaceutical approaches; the fastest growing ones involve the artemisinins and genetics. Leading countries in malaria research (including India, Thailand, Kenya and Nigeria) differ greatly in the subjects that they favour. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Bibliometrics, Biomedical Research, Countries, Disease Burden, Europe, Genome Sequence, Health, Malaria, Pharmaceuticals, Research, Research Outputs, Sub-Saharan Africa

# Title: Actas Espanolas de Psiquiatria

Full Journal Title: Actas Espanolas de Psiquiatria

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

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Subject Categories:

: Impact Factor

? Alonso-Arroyo, A., Gonzalez-Alcaide, G., Pizarro, M.B., Cogollos, L.C., Valderrama-Zurian, J.C. and eixandre-Benavent, R. (2008), Gender analysis of papers published in *Actas Espanolas de Psiquiatria* (1999-2006). *Actas Espanolas de Psiquiatria*, **36** (6), 314-322.

Full Text: 2008\Act Esp Psi36, 314.pdf

Abstract: Introduction. The governments and organizations responsible for scientific policies try to encourage equality of gender, among their priorities that of obtaining equal participation and full integration of women in all aspects of the scientific profession. The study analyzes the scientific production of women in the areas of psychiatry by means of the bibliometric study of the papers published in *Actas Espanolas de Psiquiatria*. Method. A total of 458 papers published from 1999 2006 period were downloaded from the Science Citation Index-Expanded database, these including original research papers, review articles and clinical cases. A bibliometric study broken down by gender was carried out to determine the existence or inequalities between men and women regarding scientific productivity, type of document, order of author signatures, on the institutional and geographical level. Results. The papers were published by 1,194 different authors. The gender of 977 authors was identified, 587 (60.08%) men and 390 (39.92%) women. The percentage of women authorship has risen from 29.92% in 1999 to 38.86% in 2006. A total of 42.92% of authors having one published article were women, while “the multiple article producing women” (those with more than 9 articles) only accounted for 33%. Conclusion. Bibliometric studies on scientific activity provide essential information to promote gender equality. An annual increase over 1% in the number of female authors in the journal has been observed, which if it continues, will lead to a parity in coming years.

Keywords: *Actas Espanolas de Psiquiatria*, Authors, Authorship, Bibliometric, Bibliometric Analysis, Bibliometric Study, Citation, Database, Gender Analysis, Papers, Productivity, Psychiatry, Research, Science, Scientific Journals, Scientific Production, Scientific Productivity, Women

? Benavent, R.A., Zurian, J.C.V., Gomez, M.C., Melende, R.S. and Molina, C.N. (2004), National and international impact factor of *Actas Espanolas de Psiquiatria*. *Actas Espanolas de Psiquiatria*, **32** (6), 329-332.

Abstract: The aim of this paper is to present the bibliometric indicators of *Actas Espanolas de Psiquiatria* that were obtained from the study <<Potential impact factor of the Spanish medical journals in 2001>>, financed by the Spanish Ministerio, de Educacion, Cultura y Deporte. The citations made in *Actas Espanolas de Psiquiatria* and its national and international impact factor and immediacy index have been obtained by the use of a methodology similar to the one used by the Institute for Scientific Information. The national indicators only take into account the citations made in 87 Spanish journals considered as sources, while those from the foreign source journals of Science Citation Index have been added to the previously cited ones. *Actas Espanolas de Psiquiatria* has obtained a national impact factor of 0.315 and an international impact factor of 0.395, which places it as a leader in the Spanish psychiatric journals.

Keywords: *Actas Espanolas de Psiquiatria*, Bibliometric, Bibliometric Indicators, Bibliometric Indicators, Citation, Citation Index, Citations, Immediacy Index, Impact, Impact Factor, Indicators, Information, Journals, Medical, Medical Journals, Science, Science Citation Index, Scientific Activity, Spanish Psychiatric Journals

? Blanco, R.O. and Iglesias, S.S. (2005), Comparative bibliometric study of the publications in Spanish and other European publications. *Actas Espanolas de Psiquiatria*, **33** (3), 154-159.

Abstract: Introduction. Investigation in biomedicine carried out in Spain presently has a good level and has evolved positively in the last two decades. In order to know the research situation in psychiatry, the bibliometric study was used as a method of approach to the mentioned analysis. Objectives. To identify the Spanish scientific production in psychiatry during the last decade, its repercussion worldwide and to compare it to other countries of our surroundings. Method. Bibliographical revision of the psychiatric magazines with greater impact factor at present. Thematic magazines of psychiatry and other areas (child and adolescent psychiatry and the addictions) are reviewed. The articles of Spanish authors were analyzed and compared with other countries of the surroundings (Germany, France, Holland, Italy and Sweden). The data obtained are linked with the economic data of the countries in question, it being possible to obtain how much each one of the investigations in the diverse countries cost per citizen. Results. Globally, the countries analyzed have increased their international scientific production and, specifically, Spain has doubled its scientific activity in psychiatry. Conclusions. Investigation in psychiatry in Spain is represented in publications of greater impact factor of the speciality and is comparable in volume to the other countries of our surroundings.

Keywords: Articles, Authors, Barcelona, Bibliographical Revision, Bibliometric, Bibliometric Study, Countries, Germany, Impact, Impact Factor, International Projection, Italy, Psychiatry of Impact, Publications, Publications of Impact, Research, Scientific Production, Spain

? Diáz-Moran, S. and Tobeña, A. (2011), Research contributions of Spanish Psychiatry (2004-2009): A bibliometric analysis of a University department. *Actas Espanolas de Psiquiatria*, **39** (5), 294-301.

Full Text: [2011\Act Esp Psi39, 294.pdf](2011/Act%20Esp%20Psi39,%20294.pdf)

Abstract: Psychiatric research in Spain went through a notorious increase in quality and quantity of peer-reviewed papers during the last decade of the previous century, in parallel with other medical disciplines. Although there have been systematic studies of scientific production, they are inadequate from the perspective of the research groups and particularly from university departments. We considered this bibliometric study, in order to analyze the scientific production of the Department of Psychiatry and Forensic Medicine, at the Autonomous University of Barcelona, UAB [DPsML]. Methodology. In a cross-sectional survey of independent groups (n = 57, 54% men), indicators were applied to production, quality, visibility/distribution and sustained popularity. Results. DPsML research groups, published 314 articles and/or reviews (216 international) between 2004 2009, reaching a total of 974 quotations in the period (16 quots./basic researcher and 11.3 quots./clinical researcher). Contributions at the Thomson Scientific Index [TSI], come from clinical groups (56.48%), and basic groups: 43.52%. The basic groups showed on average impact factor of 5.12 and clinical groups of 2. Conclusions. DPsML published 11.84% of most cited papers in Spanish psychiatry, 20% in the field of drug addiction and 20.84% in the field of behavioral science,1 the inconsistent results with other bibliometric studies2 on the same researchers, shows the need for more tight and demanding indicators and mapping of production encompassing, both research groups as molar units (university departments).

Keywords: Addiction, Analysis, Bibliometric, Bibliometric Analysis, Bibliometric Study, Bibliometrics, Citation Analysis, Drug, Impact, Impact Factor, Impact Index, Index, Mapping, Medical, Men, Methodology, Output, Papers, Psychiatry, Quality, Research, Researchers, Science, Scientific Output, Scientific Production, Spain, Survey, Systematic, Thomson Scientific, University

# Title: Actas Urológicas Españolas

Full Journal Title: [Actas Urologicas Espanolas](http://www.elsevier.es/es/revistas/actas-urologicas-espa%C3%B1olas-292)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

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Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Martínez-Salamanca, J.I., Martínez-Ballesteros, C., Portillo, L., Moncada, I. and Carballido, J. (2010), Penile morphometric changes after radical prostatectomy: Evidence-based. *Actas Urológicas Españolas*, **34** (7), 579-585.

Full Text: [2010\Act Uro Esp34, 579.pdf](2010/Act%20Uro%20Esp34,%20579.pdf)

Abstract: Introduction: Radical prostatectomy in all its approaches is the treatment of choice for localized prostate cancer and especially in young, sexually active patients with a desire to keep their sex life. In addition to the well-known and defined postoperative erectile dysfunction, erectile silent period causes, in many patients (9-1%), structural changes, in the penile structure, sometimes irreversible. These tissue changes, resulting in a loss of length and girth, that concern patients. Objective: To systematically review to date published data in the literature regarding penile changes after radical prostatectomy. Material and methods: We performed a systematic search in: PubMed, EMBASE, Cochrane, SCOPUS, Science Citation Index period January 1990 to September 2009 for the terms “prostatectomy”, “organ size”, “fibrosis”, “sexual activity”, “erectile dysfunction”, “penile size”, “radical prostatectomy”, “prostatic neoplasms”, “body weights” and “penis measures”. Seven series of patients were selected for analysis. Results: We described the different measurement methods and their potential biases and differences. Also, we reviewed main physiopathogenic theories to explain this phenomenon. Finally, we detail the results of different series of patients reported. Conclusions: It seems to be a proven fact that the penis undergoes major changes in its length and girth after radical prostatectomy. Several authors have communicated the data of their series and the different treatment options (5PDE inhibitors, vacuum devices, penile extenders, etc.). Strategies addressed to preserve and protect cavernous tissue and tunica albuginea after the procedure, as well as to increase oxygenation and allow erection to be recovered in the shortest posible time positive will impact on the quality of life of our patients. (C) 2009 AEU. Published by Elsevier Espana, S.L. All rights reserved.

Keywords: Authors, Cancer, Citation, Corpus Cavernosum, Embase, Erectile Dysfunction, Erectile Dysfunction, Guidelines, Length, Literature, Measurement, Penile Changes, Penile Girth, Penile Lenght, Prostate Cancer, Pubmed, Quality of Life, Radical Prostatectomy, Rat, Retropubic Prostatectomy, Review, Science Citation Index, Scopus, Self-Injection, Sexual Function, Smooth-Muscle, Vacuum Constriction Device

? Tortajada, J., Castell, J., Berbel-Tornero, O. and Ortega-Garcia, J.A. (2011), Constitutional risk factors in prostate cancer. *Actas Urológicas Españolas*, **35** (5), 282-288.

Full Text: [2011\Act Uro Esp35, 282.pdf](file:///F:/HO-reference/2011/Act%20Uro%20Esp35,%20282.pdf)

Abstract: Introduction: The aim of this review is to update and divulge the main constitutional risk factors involved in the etiopathology of prostate cancer. Materials and methods: Bibliographic review of the scientific literature on the constitutional risk factors associated with prostate cancer between 1985 and 2010, obtained from MedLine, CancerLit, Science Citation Index and Embase. The search profiles were Risk Factors, Genetic Factors, Genetic Polymorphisms, Genomics, Etiology, Epidemiology, Hormonal Factors, Endocrinology, Primary Prevention and Prostate Cancer. Results: The principal constitutional risk factors are: age (before the age of 50 years at least 0.7% of these neoplasms are diagnosed and between 75-85% are diagnosed after the age of 65 years), ethnic-racial and geographic (African Americans present the highest incidence rates, and the lowest are found in South East Asia), genetic, family and hereditary (family syndromes cover 13-26% of all prostate cancers, of which 5% are of autosomal dominant inheritance), hormonal (it is a hormone-dependent tumour), anthropometric (obesity increases the risk), perinatal, arterial hypertension and type 2 diabetes. Conclusions: Constitutional risk factors play a very important role in the etiopathology of prostate cancer, especially age, ethnic-racial-geographic factors and genetic-family factors. We cannot know what percentage of these neoplasms are a result of constitutional factors, because our knowledge of these factors is currently lacking. (C) 2010 AEU. Published by Elsevier Espana, S.L. All rights reserved.

Keywords: Bibliographic, Birth-Weight, Blood-Pressure, Body-Mass, Cancer, Carcinogenesis, Citation, Cohort, Constitutional Risk Factors, Epidemiology, Epidemiology, Insulin, Literature, Mortality, Obesity, Polymorphisms, Prostate Cancer, Retrospective Analysis, Review, Science Citation Index, United-States

? Tortajada, J., Berbel-Tornero, O., Castell, J., López-Andreu, J.A., Sobrino-Najul, E. and Ortega-García, J.A. (2011), Constitutional risk factors in prostate cancer. *Actas Urológicas Españolas*, **35** (5), 289-295.

Full Text: [2011\Act Uro Esp35, 289.pdf](2011/Act%20Uro%20Esp35,%20289.pdf)

Abstract: Introduction: The aim is to update and disclose the main environmental risk factors, excluding dietary factors, involved in the etiopathology of prostate cancer. Materials and method: Bibliographic review of the last 25 years of non-dietary environmental risk factors associated with prostate cancer between 1985 and 2010, obtained from Medline, CancerLit, Science Citation Index and Embase. The search profiles were Environmental Risk Factors/Tobacco/Infectious-Inflammatory Factors/Pesticides/Vasectomy/Occupational Exposures/Chemoprevention Agents/Radiation and Prostate Cancer. Results: While some non-dietary environmental risk factors increase the risk of acquiring the disease, others decrease it. of the former, it is worth mentioning exposal to tobacco smoke, chronic infectious-inflammatory prostatic processes and occupational exposure to cadmium, herbicides and pesticides. The first factors that reduce the risk are the use of chemopreventive drugs (Finasterida, Dutasteride) and exposure to ultraviolet solar radiation. With the current data, a vasectomy does not influence the risk of developing the disease. Conclusions: The slow process of prostate carcinogenesis is the final result of the interaction of constitutional risk and environmental factors. Non-dietary environmental factors play an important role in the etiopathology of this disease. To appropriately assess the risk factors, extensive case studies that include all the possible variables must be analysed. (C) 2010 AEU. Published by Elsevier Espana, S.L. All rights reserved.

Keywords: Agent-Orange, Bibliographic, Cancer, Citation, Constitutional Risk Factors, Environmental Risk Factors, Epidemiology, Health, Manufacturing Workers, Metaanalysis, Occupational Exposure, Occupational-Exposure, Pesticides, Polycyclic Aromatic-Hydrocarbons, Primary Prevention, Prospective Cohort, Prostate Cancer, Review, Science Citation Index, Smoking, Smoking, Tobacco, United-States, Vasectomy

# Title: Actes de la Recherche en Sciences Sociales

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ISSN: 0335-5322

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Subject Categories:

: Impact Factor

? Wouters, P. (2006), Towards the origins of scientometrics the emergence of the Science Citation Index. *Actes de la Recherche en Sciences Sociales*, (164), 10-+.

Abstract: The article analyzes the emergence of the Science Citation Index (SCI) and argues that the concept of citation indexing was not a “natural” outgrowth of the scientific field. It originated in the area of US legal publishing and information services, and was translated into a scientific reference service by an information entrepreneur, Eugene Garfield. The actual creation of the Science Citation Index and the subsequent development of the field of scientometrics were strongly shaped by the political and technological context of the late 1950s -early 1960s. The way the US responded to the Sputnik crisis and the Soviet challenge provided the opportunity for Garfield to build the Science Citation Index in close cooperation with the Nobel laureate Joshua Lederberg and to gain the legitimacy that his project previously lacked.

Keywords: Concept, Creation, Crisis, Development, Emergence, Information, Information Services, Publishing, SCI, Scientometrics, US

# Title: Activated Carbon Adsorption of Organics from the Aqueous Phase Volume 1

Ann Arbor Science Publishers. Ann Arbor Michigan, USA

Weber, Jr., W.J. and Vliet, B.M.V. (1980), Fundamental concepts for application of activated carbon in water and wastewater treatment. in *Activated Carbon Adsorption of Organics from the Aqueous Phase Volume 1*. (Edited by Suffet, I.H. and McGuire, M.J.), Ann Arbor Science Publishers. Ann Arbor Michigan, USA, 15-41.

Benedek, A., DiGiano, F., Ishizaki, C., Manes, M., McGuire, M.J., Modell, M., Myers, A.L., Snoeyink, V.L., Suffet, I.H., Suidan, M.T. and Weber, Jr., W.J. (1980), Adsorption models. in *Activated Carbon Adsorption of Organics from the Aqueous Phase Volume 1*. (Edited by Suffet, I.H. and McGuire, M.J.), Ann Arbor Science Publishers. Ann Arbor Michigan, USA, 117-129.

Singer, P.C. and Yen, C.Y. (1980), Adsorption of alkyl phenols by activated carbon. in *Activated Carbon Adsorption of Organics from the Aqueous Phase Volume 1*. (Edited by Suffet, I.H. and McGuire, M.J.), Ann Arbor Science Publishers. Ann Arbor Michigan, USA, 167-189.

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DiGiano, F.A., Baldauf, G., Frick, B. and Sontheimer, H. (1980), Simpifying the description of competitive adsorption for practical application in water treatment. in *Activated Carbon Adsorption of Organics from the Aqueous Phase Volume 1*. (Edited by Suffet, I.H. and McGuire, M.J.), Ann Arbor Science Publishers. Ann Arbor Michigan, USA, 213-228.

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Myers, A.L. and Zolandz, R.R. (1980), Effect of pH on multicomponent adsorption from dilute aqueous solution. in *Activated Carbon Adsorption of Organics from the Aqueous Phase Volume 1*. (Edited by Suffet, I.H. and McGuire, M.J.), Ann Arbor Science Publishers. Ann Arbor Michigan, USA, 243-250.

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Cairo, P.R., Crittenden, J.C., DiGiano, F.A., Fritz, W., Froelich, E.M., Manes, M., McGuire, M.J., Modell, M., Myers, A.L., Rosene, M.R., Snoeyink, V.L., Singer, P.C., Weber, Jr., W.J. and Zogorski, J.S. (1980), Adsorption of mixtures. in *Activated Carbon Adsorption of Organics from the Aqueous Phase Volume 1*. (Edited by Suffet, I.H. and McGuire, M.J.), Ann Arbor Science Publishers. Ann Arbor Michigan, USA, 337-350.

# Title: Activitas Nervosa Superior

Full Journal Title: Activitas Nervosa Superior

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Subject Categories:

: Impact Factor

? Ruttkayn, I. (1966), Anon - Science Citation Index. *Activitas Nervosa Superior*, **8** (4), 467-??.

Keywords: Citation, Science Citation Index

# Title: Actualite Chimique

Full Journal Title: Actualite Chimique

ISO Abbreviated Title: Actual Chim.

JCR Abbreviated Title: Actual Chimique

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Journal Country/Territory: France

Language: English

Publisher: Soc Francaise Chimie

Publisher Address: 250 Rue Saint-Jacques, 75005 Paris, France

Subject Categories:

Chemistry, Multidisciplinary: Impact Factor 0.096, /

? Bleneau, S. (2001), 10(th) anniversary of the French chemical responsible care. *Actualite Chimique*, (4), 37-39.

Abstract: 10(th) anniversary of the French Chemical Responsible Care “ L’Engagement de Progres, (French version of the Responsible Care), launched by the French Union of Chemical Industries (UIC), has celebrated its 10(th) anniversary in last December. By this approach, industrials in chemistry commit themselves in favour of a continuous improvement regarding security, health and environment. At this occasion, the UIC organized a manifestation to draw up an assessment of the results, to have a dialogue and to present the future objectives.

Keywords: French Chemical Industry, Responsible Care, Security, Health, Environment

# Title: Acupuncture: Review and Analysis of Reports on Controlled Clinical Trials

? World Health Organization (2002), *Acupuncture: Review and Analysis of Reports on Controlled Clinical Trials*, WHO Library Cataloguing-in-Publication Data, Geneva.

Fill Text: [2002\Acupuncture.pdf](2002/Acupuncture.pdf)

Abstract: The therapy of acupuncture has a long history. In its 2500 years of development, a wealth of experience has been accumulated, attesting to the wide range of diseases and conditions that it can effectively treat. In the past two decades, there have been extensive studies on acupuncture and great efforts have been undertaken to conduct controlled clinical trials, including the use of “sham” acupuncture or “placebo” acupuncture controls.

This publication is a brief review of the current literature on acupuncture practice, which may provide information about the effectiveness of different aspects of acupuncture therapy based on existing clinical data. Since the methodology of clinical research on acupuncture is still under debate, it is very difficult to evaluate acupuncture practice by any generally accepted measure. In this publication, only the results of controlled clinical trials that were formally published through the year 1998 (and early 1999 for some journals) are collected and reviewed.

In order to promote the appropriate use of acupuncture in those Member States where acupuncture has not been widely used, this document is annexed with a brief abstract of each relevant reference for the assessment of acupuncture practice. The clinical conditions covered in the existing data are also included. It must be emphasized that the list of diseases, symptoms or conditions covered in this publication is based on collected reports of clinical trials and, so, can serve only as a reference. Only national health authorities can determine the diseases, symptoms and conditions for which acupuncture treatment can be recommended.

# Title: Adapted Physical Activity Quarterly

Full Journal Title: [Adapted Physical Activity Quarterly](http://weblinks3.epnet.com/authHjafDetail.asp?tb=1&_ua=bo+B%5F+db+pbhjnh+bt+ID++ADP+88ED&_ug=sid+5F41C0A1%2D97E5%2D41D5%2D924F%2DA163E7023529%40sessionmgr2+dbs+pbh+8A78&_us=hd+True+sm+ES+4DBA&_uso=st%5B0+%2DID++ADP+tg%5B0+%2D+db%5B0+%2Dpbh+op%5B0+)

ISO Abbreviated Title: Adapt. Phys. Act. Q.

JCR Abbreviated Title: Adapt Phys Act Q

ISSN: 0965-2140

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Human Kinetics Publ Inc

Publisher Address: 1607 N Market St, Champaign, IL 61820-2200

Subject Categories:

Rehabilitation: Impact Factor 1.000, / (2001)

Sport Sciences: Impact Factor 1.000, / (2001)

O’Connor, J., French, R. and Sherrill, C. (2001), Scholarly productivity in adapted physical activity pedagogy: A bibliometric analysis. *Adapted Physical Activity Quarterly*, **18** (4), 434-450.

Full Text: [2001\Ada Phy Act Qua18, 434.pdf](2001/Ada%20Phy%20Act%20Qua18,%20434.pdf)

Abstract: The purpose was to determine whether publications pertaining to adapted physical activity (APA) pedagogy in the core serials from 1988 to 1998 adhere to library science laws. A bibliometric analysis was conducted on 770 articles in 259 serials selected from 4,130 serials initially identified in four databases (Article First, ERIC, Medline, Sport Discus). Results indicated that 1,720 authors have constructed the early APA pedagogy literature. of these, only 11 contributed four or more articles. The scatter of APA pedagogy literature over four zones, with 4, 15, 64, and 176 journals in the zones, respectively, supports Bradford’s law of scattering. Price’s law was not supported because most authors contributed only one article. Most pedagogy articles (n = 184) were published in Adapted Physical Activity Quarterly, Medicine and Science in Sport and Exercise, Physician and Sports Medicine, and Palaestra. Graduate education should include exposure to bibliometrics and collaboration with library and information science specialists.

Keywords: Authors, Bibliometric, Bibliometric Analysis, Bibliometrics, Bradford Law, Collaboration, Core, Databases, Documentary Analysis, Education, Guidelines, Information Science, Journals, Library Science, Literature, Medline, Productivity, Publications, Science, Serials, United-States

? Hodge, S.R., Kozub, F.M., Robinson, L.E. and Hersman, B.L. (2007), Reporting gender, race, ethnicity, and sociometric status: Guidelines for research and professional practice. *Adapted Physical Activity Quarterly*, **24** (1), 21-37.

Full Text: Ada Phy Act Qua24, 21.pdf

Keywords: Ethnicity, Gender, Practice, Professional Practice, Race, Research

# Title: Addiction

Full Journal Title: [Addiction](http://www.blackwell-synergy.com/servlet/useragent?func=showIssues&code=add)

ISO Abbreviated Title: Addiction

JCR Abbreviated Title: Addiction

ISSN: 0965-2140

Issues/Year: 12

Journal Country/Territory: England

Language: English

Publisher: Carfax Publishing

Publisher Address: Rankine Rd, Basingstoke RG24 8PR, Hants, England

Subject Categories:

Substance Abuse: Impact Factor 2.399, / (2001)

Psychiatry: Impact Factor 2.399, / (2001)

West, R. and McIlwaine, A. (2002), What do citation counts count for in the field of addiction? An empirical evaluation of citation counts and their link with peer ratings of quality. *Addiction*, **97** (5), 501-504.

Full Text: [2002\Addiction97, 501.pdf](2002/Addiction97,%20501.pdf)

Abstract: Aims This study investigated the value of citation counts as an index of quality in the field of addiction and examined factors that contribute to papers being cited more or less frequently.

Design The number of times papers published by the journal Addiction in 1995-98 that had been cited up to May 2000 were counted using the Science and the Social Science Citation Indexes. Articles in nine of the monthly issues from 1997 were rated by two independent expert raters for quality. Factors related to citation counts were also examined including: country of origin of the paper, substance type, solicited versus unsolicited papers and methodology used.

Findings A total of 417 unsolicited research reports were included in the citation analysis, of which 79 were also subjected to quality ratings. The experts showed a moderate level of agreement in their ratings (intraclass correlation = 0.39, p < 0.001). However, there was no correlation between number of citations and expert ratings of article quality (R < 0.1). Papers from developing countries received significantly fewer citations than papers from other countries but substance type (e.g. nicotine. opiate. alcohol) and methodology (e.g. survey, treatment trial) were not related to number of citations.

Conclusions This study involved just one journal but raised an important issue: the number of citations received by papers on addiction appears to reflect the geographical region of study rather than what experts would consider as ‘quality’. If these findings are found to generalize they call into question the use of citation-related indices as measures of quality in this field and perhaps in others as well. To our knowledge our methodology has not been used before and could be adapted to study the value of citations more widely.

Keywords: Addiction, Bias, Bibliometric Analysis, Citation, Citation Analysis, Citations, Countries, Evaluation, Index Impact Factor, Knowledge, Medical Journals, Papers, Psychiatric Journals, Publications, Quality, Research, Science, Treatment

? Pennings, E.J.M., Leccese, A.P. and de Wolff, F.A. (2002), Effects of concurrent use of alcohol and cocaine. *Addiction*, **97** (7), 773-783.

Full Text: [2002\Addiction97, 773.pdf](2002/Addiction97,%20773.pdf)

Abstract: The combination of alcohol and cocaine is popular among drug users, perhaps because of more intense feelings of ‘high’ beyond that perceived with either drug alone, less intense feelings of alcohol-induced inebriation and tempering of discomfort when coming down from a cocaine ‘high’. A review is presented of the medical literature on psychological and somatic effects and consequences of combined use of alcohol and cocaine in man. The search was carried out with Medline. the Science Citation Index/Web of Science and Toxline. Exclusion and inclusion criteria for this search are identified. There is generally no evidence that the combination of the two drugs does more than enhance additively the already strong tendency of each drug to induce a variety of physical and psychological disorders. A few exceptions must be noted. Cocaine consistently antagonizes the learning deficits, psychomotor performance deficits and driving deficits induced by alcohol. The combination of alcohol and cocaine tends to have greater-than-additive effects on heart rate, concomitant with up to 30% increased blood cocaine levels. Both prospective and retrospective data further reveal that co-use leads to the formation of cocaethylene, which may potentiate the cardiotoxic effects of cocaine or alcohol alone. More importantly, retrospective data suggest that the combination can potentiate the tendency towards violent thoughts and threats, which may lead to an increase of violent behaviours.

Keywords: Abuse, Alcohol, Alcohol-Related Disorders, Behavior, Blood, Citation, Cocaethylene, Cocaine, Cocaine-Related Disorders, Combination, Dependent Patients, Driving, Drug, Drug Interactions, Drug-Use, Ethanol, Ethanol Ingestion, Fatally Injured Drivers, Heart Rate, Human, Humans, Induced, Lead, Learning, Literature, Medical, New-York, Psychomotor, Review, Science

? Gable, R.S. (2004), Comparison of acute lethal toxicity of commonly abused psychoactive substances. *Addiction*, **99** (6), 686-696.

Full Text: [2004\Addiction99, 686.pdf](2004/Addiction99,%20686.pdf)

Abstract: Aims To determine the acute lethal toxicity of a range of psychoactive substances in terms of the dose customarily used as a single substance for non-medical purposes. Design and method A structured English-language literature search was conducted to identify experimental studies and clinical reports that documented human and non-human lethal doses of 20 abused substances that are distributed widely in Europe and North America. Four inclusion criteria were specified for the reports, and approximately 3000 relevant records were retrieved from search engines at Biosis, Science Citation Index, Google and the National Library of Medicine’s Gateway. In order to account for different drug potencies, a ‘safety ratio’ was computed for each substance by comparing its reported acute lethal dose with the dose most commonly used for non-medical purposes. Findings The majority of published reports of acute lethal toxicity indicate that the decedent used a co-intoxicant (most often alcohol). The calculated safety ratios varied between substances by more than a factor of 100. Intravenous heroin appeared to have the greatest direct physiological toxicity; several hallucinogens appeared to have the least direct physiological toxicity. Conclusions Despite residual uncertainties, the substantial difference in safety ratios suggests that abused substances can be rank-ordered on the basis of their potential acute lethality.

Keywords: Acute Toxicity, Blood, Citation, Death, Europe, Heroin Overdose, Humans, Intranasal Cocaine, Lethality, Literature, Methadone, Morphine Concentrations, Pharmacokinetics, Positive Subjective Effects, Relative Toxicity, Safety, Safety Ratio, Science, Science Citation Index, Serotonin Reuptake Inhibitors, Therapeutic Index, Toxicity

? Sanchez-Carbonell, X., Guardiola, E., Belles, A. and Beranuy, M. (2005), European Union scientific production on alcohol and drug misuse (1976-2000). *Addiction*, **100** (8), 1166-1174.

Full Text: [2005\Addiction100, 1166.pdf](2005/Addiction100,%201166.pdf)

Abstract: Backgrounds Alcohol and drug misuse is a social and health phenomenon of great relevance in the European Union (EU). One indicator of scientific production in a given area is the analysis of publications included in bibliographic databases. Scientific production on alcohol and drug misuse was analysed in EU member countries, and comparisons were made between countries. Methods Analysis of articles on alcohol and drug misuse published during the period 1976-2000 by institutions based in a country of the EU, indexed by PsycINFO. Results A total of 4825 citations was retrieved. Great Britain published 38.6%, while Sweden, Germany and Spain accounted for a further 30%. The articles dealt with drug and alcohol usage (12.8%), substance abuse (53.5%) and drug and alcohol rehabilitation (34.5%). The articles were published in 13 different languages, more than three-quarters being in English. Spanish was the second language, and was followed by French, German, Dutch and Italian. The articles were published in 521 different journals, and 62 of these published more than 10 articles. The journals publishing most were Addiction, Alcohol and Alcoholism and Drug and Alcohol Dependence. Sixty-eight per cent of the articles were signed by more than one author, and the index of collaboration, between 1996 and 2000, was 3.24. Discussions and conclusions PsycINFO is useful for making comparisons between countries, because it includes the name and country of the institution. The number of publications in the EU on alcohol and drug misuse increased over the quarter-century analysed. The most used language was English, as it also is for PsycINFO as a whole, and a tendency towards its increased use was observed. Classification of the articles by subject by the Classification Code is too general, and makes it difficult to distinguish between the areas it proposes. Production tends to be concentrated in journals dealing specifically with drug dependence and psychiatry. The index of collaboration is similar to that found in other scientific areas.

Keywords: Addiction, Alcohol and Drug Misuse, Bibliographic Databases, Bibliometrics, Citation Analysis, Citations, Cocaine, Collaboration, Countries, Databases, Dependence, English, European Union, Germany, Impact, Journal Articles, Journals, Language, Psycinfo, Publication Trends, Publications, Publishing, Rehabilitation, Scientific Production, Spain, Substance Dependence, Tobacco

? Webb, G., Shakeshaft, A., Sanson-Fisher, R. and Havard, A. (2009), A systematic review of work-place interventions for alcohol-related problems. *Addiction*, **104** (3), 365-377.

Full Text: [2009\Addiction104, 365.pdf](2009/Addiction104,%20365.pdf)

Abstract: The aims of this study were to (1) gauge any improvement in methodological quality of work-place interventions addressing alcohol problems; and (2) to determine which interventions most effectively reduce work-place-related alcohol problems. A literature search was undertaken of the data bases, Ovid Medline, PsychINFO, Web of Science, Scopus, HSELINE, OSHLINE and NIOSHTIC-2 for papers published between January 1995 and September 2007 (inclusive). Search terms varied, depending on the database. Papers were included for analysis if they reported on interventions conducted at work-places with the aim of reducing alcohol problems. Methodological adequacy of the studies was assessed using a method derived from the Cochrane Collaboration guidelines. Ten papers reporting on work-place alcohol interventions were located. Only four studies employed randomized controlled trials (RCT), but all these had methodological problems. Weaknesses in all studies related to representativeness of samples, consent and participation rates, blinding, post-test time-frames, contamination and reliability, and validity of measures used. All except one study reported statistically significant differences in measures such as reduced alcohol consumption, binge drinking and alcohol problems. The literature review revealed few methodologically adequate studies of work-place alcohol interventions. Study designs, types of interventions, measures employed and types of work-places varied considerably, making comparison of results difficult. However, it appears from the evidence that brief interventions, interventions contained within health and life-style checks, psychosocial skills training and peer referral have potential to produce beneficial results.

Keywords: Alcohol, Alcohol Abuse, Alcohol Consumption, Analysis, Cochrane, Collaboration, Consumption, Guidelines, Health-Promotion, Impact, Intervention Studies, Interventions, Literature, Literature Review, Papers, Problem Drinking, Program, Psychosocial, Randomized Controlled Trials, Reliability, Review, Science, Scopus, Substance-Abuse Prevention, Systematic, Systematic Review, Training, Validity, Web of Science, Work-Place, Work-Site, Workers

? Saraceno, L., Munafó, M., Heron, J., Craddock, N. and van den Bree, M.B.M. (2009), Genetic and non-genetic influences on the development of co-occurring alcohol problem use and internalizing symptomatology in adolescence: A review. *Addiction*, **104** (7), 1100-1121.

Full Text: [2009\Addiction104, 1100.pdf](2009/Addiction104,%201100.pdf)

Abstract: Alcohol problem use during adolescence has been linked to a variety of adverse consequences, including cigarette and illicit drug use, delinquency, adverse effects on pubertal brain development and increased risk of morbidity and mortality. In addition, heavy alcohol-drinking adolescents are at increased risk of comorbid psychopathology, including internalizing symptomatology (especially depression and anxiety). A range of genetic and non-genetic factors have been implicated in both alcohol problem use as well as internalizing symptomatology. However, to what extent shared risk factors contribute to their comorbidity in adolescence is poorly understood. We conducted a systematic review on Medline, PsycINFO, Embase and Web of Science to identify epidemiological and molecular genetic studies published between November 1997 and November 2007 that examined risk factors that may be shared in common between alcohol problem use and internalizing symptomatology in adolescence. Externalizing disorders, family alcohol problems and stress, as well as the serotonin transporter (5-HTT) S-allele, the monoamine oxidase A (MAOA) low-activity alleles and the dopamine D2 receptor (DDR2) Taq A1 allele have been associated most frequently with both traits. An increasing number of papers are focusing upon the role of gene-gene (epistasis) and gene-environment interactions in the development of comorbid alcohol problem use and internalizing symptomatology. Further research in adolescents is warranted; the increasing availability of large longitudinal genetically informative studies will provide the evidence base from which effective prevention and intervention strategies for comorbid alcohol problems and internalizing symptomatology can be developed.

Keywords: Activity-Dependent Secretion, Adolescents, Adverse Effects, Alcohol, Alcohol Drinking, Alcohol Problem Use, Anxiety, Brain, Brain Development, Catechol-O-Methyltransferase, Comorbidity, Deficit Hyperactivity Disorder, Depression, Depression And Anxiety, Development, Dopamine-Receptor Gene, Drug, Drug Use, Genetic, Illicit Drug-Use, Intervention, Molecular, Morbidity, Mortality, Muscarinic Acetylcholine-Receptor, Neurotrophic Factor BDNF, Oxidase-A Gene, Papers, Prevention, Research, Review, Risk, Risk Factors, Science, Serotonin, Serotonin Transporter Gene, Stress, Substance Use Disorders, Systematic, Systematic Review, Web of Science

? Boden, J.M. and Fergusson, D.M. (2011), Alcohol and depression. *Addiction*, **106** (5), 906-914.

Full Text: [2011\Addiction104, 906.pdf](2011/Addiction104,%20906.pdf)

Abstract: Aims To examine the literature on the associations between alcohol use disorders (AUD) and major depression (MD), and to evaluate the evidence for the existence of a causal relationship between the disorders. Methods PsycInfo; PubMed; Embase; Scopus; ISI Web of Science database searches for studies pertaining to AUD and MD from the 1980 to the present. Random-effects models were used to derive estimates of the pooled adjusted odds ratios (AOR) for the links between AUD and MD among studies reporting an AOR. Results The analysis revealed that the presence of either disorder doubled the risks of the second disorder, with pooled AORs ranging from 2.00 to 2.09. Epidemiological data suggest that the linkages between the disorders cannot be accounted for fully by common factors that influence both AUD and MD, and that the disorders appear to be linked in a causal manner. Further evidence suggests that the most plausible causal association between AUD and MD is one in which AUD increases the risk of MD, rather than vice versa. Potential mechanisms underlying these causal linkages include neurophysiological and metabolic changes resulting from exposure to alcohol. The need for further research examining mechanisms of linkage, gender differences in associations between AUD and MD and classification issues was identified. Conclusions The current state of the literature suggests a causal linkage between alcohol use disorders and major depression, such that increasing involvement with alcohol increases risk of depression. Further research is needed in order to clarify the nature of this causal link, in order to develop effective intervention and treatment approaches.

Keywords: Alcohol, Alcohol Use Disorder, Analysis, Antisocial Personality, Binge Drinking, Causality, Chrm2 Gene, Controlled-Trial, Depression, Disorder, DSM-IV, Epidemiology, Gender, Intervention, Involvement, ISI, Literature, Literature Review, Major Depression, Major Depression, Mental-Health, Methods, Mood Disorders, National Epidemiologic Survey, PUBMED, Research, Risk, Science, Scopus, Substance Use Disorders, Treatment, Web of Science

? Vangeli, E., Stapleton, J., Smit, E.S., Borland, R. and West, R. (2011), Predictors of attempts to stop smoking and their success in adult general population samples: A systematic review. *Addiction*, **106** (12), 2110-2121.

Full Text: [2011\Addiction106, 2110.pdf](2011/Addiction106,%202110.pdf)

Abstract: Aims To identify the predictors of attempts to stop smoking and the predictors of quit attempt success in adult general population samples. Methods We performed an electronic search of EMBASE, Pubmed, Web of Science, PsychINFO and the Cochrane Tobacco Addiction Group specialized register for articles that examined, in prospective adult general population samples, predictors of quit attempts and the success of quit attempts. Experts were contacted for knowledge of other relevant studies. Eight studies met the inclusion criteria and results were extracted independently by two researchers. Results There was considerable methodological heterogeneity between studies. Motivational factors dominated the prediction of quit attempts, whereas only cigarette dependence consistently predicted success after an attempt had been made. Social grade also appeared to predict success but was only examined in two studies. None of the other socio-demographic factors consistently predicted making a quit attempt or success. Conclusions Population-level studies from a number of countries show that past quit attempts and measures of motivation to stop are highly predictive of quit attempts, whereas only measures of dependence are consistently predictive of success of those attempts. Gender, age and marital status and educational level are not related consistently to quit attempts or quit success across countries.

Keywords: 4 Country Survey, Abstinence, Addiction, Adult, Behaviors, Beliefs, Cessation, Cochrane, Embase, Gender, General Population, Itc 4-Country Survey, Knowledge, Methods, Motivation, Predictors, Quit Attempt Success, Quit Attempts, Quitting Findings, Relapse, Researchers, Review, Review of Observational Studies, Science, Smokers, Smoking, Success, Systematic, Systematic Review, Tobacco, Web of Science

# Title: Adhesives Age

Full Journal Title: Adhesives Age

ISO Abbreviated Title: Adhes. Age

JCR Abbreviated Title: Adhes Age

ISSN: 0001-821X

Issues/Year: 13

Journal Country/Territory: United States

Language: English

Publisher: Intertec Publ Corp Primedia Co

Publisher Address: One I B M Plaza, Ste 2300, Chicago, Il 60611

Subject Categories:

Engineering, Chemical: Impact Factor 0.062, /, Impact Factor 0.033, 114/123 (2001)

? Schwartz, J. (1999), Solving the puzzle: Are the responsible care pieces coming together? *Adhesives Age*, **42** (11), 17.

# Title: Adicciones

Full Journal Title: Adicciones

ISO Abbreviated Title: Adicciones

JCR Abbreviated Title: Adicciones

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Miquel, L., Roncero, C., Lopez-Ortiz, C. and Casas, M. (2011), Epidemiological and diagnostic axis I gender differences in Dual Diagnosis patients. *Adicciones*, **23** (2), 165-172.

Full Text: [2011\Adicciones23, 165.pdf](2011/Adicciones23,%20165.pdf)

Abstract: Introduction: Dual diagnosis is the co-occurrence of a substance abuse disorder and a psychiatric condition. Gender has been found to be associated with differences in prevalence of mental disorders as well as outcome, prognosis and treatment-seeking. Material and Methods: Articles published in Medline, Web of Science and Journal Citation Reports up to December 2009 that examined gender, prevalence and clinical characteristics of dual-diagnosis patients aged over 18 were reviewed. Conclusions: The distribution of Axis I disorders by gender is similar for dually diagnosed patients and single-disorder patients. The prevalence of psychotic and bipolar disorders is higher in men, whereas anxiety and affective disorders are more prevalent in women. Dually diagnosed females with psychotic disorders do not show better prognosis than men. Finally, polydrug use among dual-diagnosis individuals is more prevalent in males.

Keywords: Addiction, Aged, Alcohol-Use Disorders, Anxiety, Articles, Bipolar Disorder, Citation, Comorbid Anxiety Disorder, Diagnosis, Disorder, Dual Diagnosis, Gender, Initial Evaluation, Journal, Journal Citation Reports, Mental Disorders, Mental-Disorders, Methods, Outcome, Prevalence, Prognosis, Psychiatric Comorbidity, Risk-Factors, Science, Sex-Differences, Stress-Disorder, Substance Use Disorder, Substance Use Disorders, Web of Science, Women

# Title: Adsorption

Horwood, Chichester

Ościk, J. (1982), *Adsorption*, Ellis Horwood, New York, Chichester, Brisbane and Toronto.

# Title: Adsorption Calculations and Modelling

? Tien, C. (1994), *Adsorption Calculations and Modelling*. (Edited by Tien, C. and Brenner, H.), Butterworth-Heinemann.

# Title: Adsorption and Diffusion

Molecular Sieves - Science and Technology, Springer Berlin / Heidelberg

[Adsorption and Diffusion](http://www.springerlink.com/content/n0g3m137066k/?p=5d6ad8660c134abeba3ba93567eb3c1d&pi=0)

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Full Text: [2008\Ads Dif, 1.pdf](2008/Ads%20Dif,%201.pdf)

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Full Text: [2008\Ads Dif, 45.pdf](2008/Ads%20Dif,%2045.pdf)

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Full Text: [2008\Ads Dif, 85.pdf](2008/Ads%20Dif,%2085.pdf)

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Full Text: [2008\Ads Dif, 135.pdf](2008/Ads%20Dif,%20135.pdf)

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Full Text: [2008\Ads Dif, 207.pdf](2008/Ads%20Dif,%20207.pdf)

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Full Text: [2008\Ads Dif, 235.pdf](2008/Ads%20Dif,%20235.pdf)

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Full Text: [2008\Ads Dif, 277.pdf](2008/Ads%20Dif,%20277.pdf)

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Full Text: [2008\Ads Dif, 329.pdf](2008/Ads%20Dif,%20329.pdf)

# Title: Adsorption Engineering

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# Title: Adsorption of Inorganics at the Solid Liquid Interface

Ann Arbor Science Publishers, Ann Arbor, Michigan, USA

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# Title: Adsorption-Journal of the International Adsorption Society

Full Journal Title: [Adsorption-Journal of the International Adsorption Society](http://www.springerlink.com/content/102837/)

ISO Abbreviated Title: Adsorpt. -J. Int. Adsorpt. Soc.

JCR Abbreviated Title: Adsorption

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Issues/Year: 4

Journal Country/Territory: Netherlands

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Publisher: Kluwer Academic Publ

Publisher Address: Spuiboulevard 50, PO Box 17, 3300 AA Dordrecht, Netherlands

Subject Categories:

Chemistry, Physical: Impact Factor 1.043, 55/90 (1999); Impact Factor 0.691, 69/91 (2000); Impact Factor 0.931, 65/93 (2001); Impact Factor 1.097, 56/95 (2002); Impact Factor 0.983, 72/101 (2003); Impact Factor 1.063, 74/106 (2004); Impact Factor 1.323, 70/111 (2005); Impact Factor 0.590, 91/108 (2006); Impact Factor 1.580, 77/121 (2009)

Engineering, Chemical: Impact Factor 1.043, 15/110 (1999); Impact Factor 0.691, 32/117 (2000); Impact Factor 0.931, 29/123 (2001); Impact Factor 1.097, 19/126 (2002); Impact Factor 0.983, 32/119 (2003); Impact Factor 1.063, 33/116 (2004); Impact Factor 1.323, 30/116 (2005); Impact Factor 0.590, 62/110 (2006); Impact Factor 1.580, 41/126 (2009)

Talu, O., Li, J. and Myers, A.L. (1995), Activity coefficients of adsorbed mixtures. *Adsorption-Journal of the International Adsorption Society*, **1** (2), 103-112.

Full Text: [1995\Adsorption1, 103.pdf](1995/Adsorption1,%20103.pdf)

Abstract: Experimental and simulated data for adsorption of gas mixtures on energetically heterogeneous surfaces like activated carbon and zeolites exhibit negative deviations from ideality. The deviations are large in some cases, with activity coefficients at infinite dilution equal to 0.1 or less. Similar molecules form ideal mixtures, but molecules of different size or polarity are nonideal. Equations for bulk liquid mixtures (Wilson, Margules, etc.) do not apply to isobars for adsorbed mixtures. A two-constant equation for activity coefficients as a function of composition and spreading pressure is in good agreement with theory, simulation, and experiment.

Keywords: Adsorption, Mixtures, Activity Coefficients, Zeolites, GAS-Adsorption

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Full Text: [1995\Adsorption1, 113.pdf](1995/Adsorption1,%20113.pdf)

Abstract: Aqueous 1,1,2-trichloroethene (TCE) adsorption isotherms were obtained on Ambersorb1® 563 and 572 adsorbents and Filtrasorb2® 400 granular activated carbon (GAC). The data for Ambersorb 563 adsorbent covers TCE concentrations from 0.0009 to 600 mg/L. The data for each adsorbent was fit to 15 isotherm equations to determine an optimum equation.

The best equation for the TCE adsorption isotherms is the Dubinin-Astakov (DA) isotherm. The DA isotherm coefficients were used to estimate the TCE micropore volume and the adsorption potential distribution. For each adsorbent, the TCE micropore volume is equivalent to the N2 porosimetry micropore volume. The mean adsorption potential is 18.8, 13.0, and 8.9 kJ/mol, with coefficients of variation of 0.37, 0.53, and 0.67, for Ambersorb 563 and 572 adsorbents and Filtrasorb 400 GAC, respectively. Thus, Ambersorb 563 adsorbent has the most energetic and most homogeneous adsorption volume, while Filtrasorb 400 GAC has the least energetic and most heterogeneous adsorption volume. For these reasons, Ambersorb 563 adsorbent has the highest TCE capacity at low concentrations, whereas Filtrasorb 400 GAC has the highest TCE capacity at high concentrations. The performance of Ambersorb 572 adsorbent is generally intermediate to the other two adsorbents.

Keywords: Adsorbent Properties, Liquid Phase Adsorption Isotherms, Activated Carbon

? Ray, M.S. (1996), Adsorption and adsorptive separations: A review and bibliographical update (1994). *Adsorption-Journal of the International Adsorption Society*, **2** (2), 157-178.

Full Text: [1996\Adsorption2, 157.pdf](1996/Adsorption2,%20157.pdf)

Abstract: This paper provides a review of the 1994 journal literature and complete bibliography concerned with adsorptive separations. The references are taken from the 45 most important chemical engineering journals. This paper provides an update to the literature as provided in previous bibliographic papers (Ray 1990; 1991; 1995). References for membranes and membrane-type separations (for 1992-1993) were the subject of a separate bibliographic paper (Ray 1994), due to the number of papers now published on this topic each year. A review and bibliography paper covering 1994 for membranes has been submitted for publication. Bibliographic papers covering traditional unit operations (Ray 1992; 1993; 1994; 1994) and supercritical extraction (Ray 1994) have been published. A bibliography of the chemical engineering Journal literature from 1967-1988 has been published by the author (Ray 1990), and can provide access to a wider range of topics. A complete bibliographic listing of the chemical engineering journal literature from 1989 to 1994 (with subsequent six-monthly updates) is available on a CD-ROM database (Published by Royal Melbourne Institute of Technology) and full details can be obtained from the author.

Keywords: Adsorption, Applications, Author, Bibliography, Complete, Database, Extraction, Journal, Journals, Literature, Processes, Publication, References

? Hu, X. and Do, D.D. (1996), Contribution of concentration-dependent surface diffusion in ternary adsorption dynamics of ethane, propane and n-butane in activated carbon. *Adsorption-Journal of the International Adsorption Society*, **2** (3), 217-225.

Full Text: [1996\Adsorption2, 217.pdf](1996/Adsorption2,%20217.pdf)

Abstract: The role of concentration-dependent surface diffusion in the adsorption kinetics of a multicomponent system is investigated in this paper. Ethane, propane and n-butane are selected as the model adsorbates and Ajax activated carbon as the model adsorbent. Adsorption equilibrium isotherm and dynamic parameters extracted from single-component systems are used to predict the ternary adsorption equilibria and kinetics. The effect of concentration-dependent surface diffusion on the adsorption kinetics predictions is studied by comparing the results of two mathematical models with the experimental data. Three diffusion mechanisms, macropore, surface and micropore diffusions are incorporated in both models. The distinction between these two models is the use of the chemical potential gradient as the driving force for the diffusion of the adsorbed species in one model and the concentration gradient in the other. It was found that the model using the chemical potential gradient provides a better prediction of the ternary adsorption kinetics data, suggesting the importance of the concentration dependency of the surface diffusion, which is implicitly reflected in the chemical potential gradient. The kinetic model predictions are also affected by the way how single-component adsorption equilibrium isotherm data are fitted.

Staudt, R., Dreisbach, F. and Keller, J.U. (1998), Correlation and calculation of multicomponent adsorption equilibria data using a generalized adsorption isotherm. *Adsorption-Journal of the International Adsorption Society*, **4** (1), 57-62.

Full Text: [A\Adsorption4, 57.pdf](A/Adsorption4,%2057.pdf)

Abstract: Enhanced by the need for reliable and accurate data of multicomponent gas adsorption equilibria on porous solids like activated carbons or zeolites, a new method to measure and correlate coadsorption equilibria has been developed. This method is a combination of gravimetric or volumetric measurements of the total load of pure or multicomponent adsorbates (Staudt, 1994; Gregg and Sing, 1982) and a correlation and calculation procedure using a new adsorption isotherm (AI) (Keller, 1990). This AI is thermodynamically consistent and describes adsorbates with fractal dimension for single-or multicomponent systems and load dependent adsorption energies. This method allows calculation of partial loads of multicomponent coadsorption equilibria from pure component data and the total loads of the mixture adsorption equilibria. This will be demonstrated for binary and ternary adsorption equilibria of CH4, C2H4 and C2H6 On activated carbon (Reich et al., 1980).

Keywords: Multicomponent Adsorption, Coadsorption, Fractal Dimension, Adsorption Isotherm, Heat of Adsorption, Mixtures

Ülkü, S., Balköse, D., Çağa, T., Özkan F. and Ulutan, S. (1998), A study of adsorption of water vapour on wool under static and dynamic conditions. *Adsorption-Journal of the International Adsorption Society*, **4** (1), 57-62.

Full Text: [A\Adsorption4, 63.pdf](A/Adsorption4,%2063.pdf)

Abstract: Adsorption of water vapour on wool provides not only textile comfort, but also convenience in transportation due to increase in its bulk density. The adsorption and desorption isotherms of water vapour for wool were determined by both volumetric technique using a Coulter Omnisorp 100CX instrument and gravimetric method employing a Cahn 2000 electronic microbalance. Adsorption isotherm fitting to B.E.T. model and hysteresis on desorption was observed. The average effective diffusion coefficient of water in wool was found to be 8.4×10-14 m2s-1 at 25°C from gravimetric data. The effects of packing height and air velocity on the breakthrough curves were also investigated in the wool packed columns. For pseudo first order model, k values changing between 0.33×10-6 – 69×10-6 s-1 was obtained for 2.2–6.4 cm s-1 air velocity and 0.05–0.20 m packing height ranges.

Keywords: Wool-Water Vapour, Adsorption, Diffusion, Column Dynamics

McKay, G. (1998), Application of surface diffusion model to the adsorption of dye on bagasse pith. *Adsorption-Journal of the International Adsorption Society*, **4** (3-4), 361-372.

Full Text: [A\Adsorption4, 361.pdf](A/Adsorption4,%20361.pdf)

Abstract: A homogeneous solid phase diffusion model (HSDM) has been developed using a computer to predict the performance of a batch adsorber. The computer program utilises a semi-analytical solution for a two resistance model based on external mass transfer and homogeneous solid phase diffusion. The model has been successfully applied to four adsorption systems, namely, the adsorption of AB25, AR114, BB69 and BR22 onto pith. The method produces excellent correlations between experimental and theoretical concentration decay curves in batch adsorbers. The model developed presents a solution using a single solid diffusion coefficient and a single external mass transfer coefficient which are sufficient to characterise the system within a range of initial dye concentration, 25-300 mg.dm3 and solid/liquid ratios (w/v) 0.25-2.

Keywords: Activated Carbon Columns, Multicomponent Adsorption, Binary Adsorption, Aqueous-Solutions, Pore Diffusion, Finite Bath, Systems, Single, Equilibrium, Prediction, Dyestuffs, Modeling, HSDM, Equilibrium, Film Diffusion

Bottani, E. and Steele, W.A. (1999), A new approach to the theory for adsorption isotherms on heterogeneous surfaces. *Adsorption-Journal of the International Adsorption Society*, **5** (1), 81-89.

Full Text: [A\Adsorption5, 81.pdf](A/Adsorption5,%2081.pdf)

Abstract: Simulations of the adsorption of nitrogen on several model heterogeneous surfaces (Cascarini de Torre and Bottani, 1997) are analyzed using an alternative description in which the surface is treated as a collection of supersites, each of which can hold 5-6 molecules in the complete monolayer. The local isotherm that is used to describe the sub-monolayer adsorption on a supersite is here taken to be the truncated virial isotherm. This theory fits well to the simulated data. The advantages and disadvantages of this approach are discussed and it is concluded that the supersite concept is a promising approach to the description of a adsorption on realistic models of heterogeneous surfaces.

Keywords: N2, Virial, Supersite, Local Isotherm, Carbonaceous Materials

Mohr, R.J., Vorkapic, D., Rao, M.B. and Sircar, S. (1999), Pure and binary gas adsorption equilibria and kinetics of methane and nitrogen on 4A zeolite by isotope exchange technique. *Adsorption-Journal of the International Adsorption Society*, **5** (2), 145-158.

Full Text: [A\Adsorption5, 145.pdf](A/Adsorption5,%20145.pdf)

Abstract: The Isotope Exchange Technique (IET) was used to simultaneously measure pure and binary gas adsorption equilibria and kinetics (self-diffusivities) of CH4 and N2 on pelletized 4A zeolite. The experiment was carried out isothermally without disturbing the adsorbed phase. CH4 was selectively adsorbed over N2 by the zeolite because of its higher polarizability. The multi-site Langmuir model described the pure gas and binary adsorption equilibria fairly well at three different temperatures. The selectivity of adsorption of CH4 over N2 increased with increasing pressure at constant gas phase composition and temperature. This curious behavior was caused by the differences in the sizes of the adsorbates. The diffusion of CH4 and N2 into the zeolite was an activated process and the Fickian diffusion model described the uptake of both pure gases and their mixtures. The self-diffusivity of N2 was an order of magnitude larger than that for CH4. The pure gas self-diffusivities for both components were constants over a large range of surface coverages (0 < theta < 0.5). The self-diffusivities of CH4 and N2 from their binary mixtures were not affected by the presence of each other, compared to their pure gas self-diffusivities at identical surface coverages.

Keywords: Kinetics, Isotope-Exchange, Nitrogen, Adsorption, Methane, Zeolite, Equilibria

? Jaroniec, M., Jaroniec, C.P., Kruk, M. and Ryoo, R. (1999), Adsorption and thermogravimetric methods for monitoring surface and structural changes in ordered mesoporous silicas induced by their chemical modification. *Adsorption-Journal of the International Adsorption Society*, **5** (4), 313-317.

Full Text: [1999\Adsorption5, 313.pdf](1999/Adsorption5,%20313.pdf)

Abstract: The current work demonstrates that the standard adsorption analysis has a limited applicability for characterization of chemically modified porous silicas. Since low-pressure nitrogen adsorption isotherms are sensitive to the surface changes caused by chemical modification of silicas, these isotherms were successfully used to evaluate their surface heterogeneity during different stages of modification. The surface analysis was accomplished by using adsorption energy distributions and high-resolution comparative plots.

Keywords: Adsorption, Adsorption Energy Distribution, Adsorption Isotherms, Analysis, Bonding of Organosilanes, Characterization, Chemical, Chemical Modification, Distributions, Energy, Heterogeneity, Isotherms, MCM-41, Molecular-Sieves, Monitoring, Nitrogen, Nitrogen Adsorption, Pore Structure Analysis, Porous, Standard, Surface Analysis, Thermogravimetric

Do, D.D. and Do, H.D. (1999), On the azeotropic behaviour of adsorption systems. *Adsorption-Journal of the International Adsorption Society*, **5** (4), 319-329.

Full Text: [A\Adsorption5, 319.pdf](A/Adsorption5,%20319.pdf)

Abstract: This paper addresses the azeotropic behaviour of adsorption occurring on a heterogeneous solid, which is composed of patches of different adsorption energies. One of the adsorbates is excluded from adsorption onto one or more patches. If such species is the weaker adsorbing species, then the azeotropic behaviour does not occur. On the other hand, if that species is the stronger adsorbing species then the azeotropic phenomenon might occur. The occurrence of the azeotropic depends on the relative affinities of all species and the total pressure must be greater than a threshold pressure. We shall illustrate this theory with two systems exhibiting azeotropic behaviour: isobutane/ethylene/13X and propane/carbon dioxide/mordenite.

Keywords: Azeotropic, Heterogeneous Solid, Equilibrium, Mixtures, Carbon

Ustinov, E.A. and Klyuev, L.E. (1999), Adsorption equilibrium of binary mixtures in zeolites and state of adsorbed phase. *Adsorption-Journal of the International Adsorption Society*, **5** (4), 331-343.

Full Text: [A\Adsorption5, 331.pdf](A/Adsorption5,%20331.pdf)

Abstract: The criterion of ideal behavior of a mixture of a few molecules within a separate zeolite cavity is formulated on the basis of the statistical thermodynamics. The criterion determines the dependence of the Helmholtz free energy, internal energy, and entropy of a molecular aggregate on the ratio of the number of molecules of components 1 and 2. The similarity between this criterion and the criterion of ideal behavior for bulk solutions is shown. Expressions of excess thermodynamic functions of the molecular mixture in a cavity are obtained. The negative magnitude of these excess functions is proposed to be due to rearrangement of molecules under influence of energetic heterogeneity. The calculation procedure of the excess functions has been demonstrated for the system CO2-C2H6-zeolite NaX, the information of both isotherms and isosteric adsorption heats being used simultaneously. The approach offered allows the state of adsorbed mixture in a separate cavity to be analyzed from pure-component and multicomponent experimental data.

Keywords: Zeolite, Equilibrium Theory, Multicomponent System, Gases Phase, Adsorbed Solution, Excess Functions, Vacancy Solution Theory, Calorimetric Heats, Molecular-Sieve, Gas-Mixtures, Sorption, Isotherms, Nitrogen, Oxygen, C2H6, CH4

Garcia, A., Ferreira, L., Leitao, A. and Rodrigues, A. (1999), Binary adsorption of phenol and m-cresol mixtures onto a polymeric adsorbent. *Adsorption-Journal of the International Adsorption Society*, **5** (4), 359-368.

Full Text: [A\Adsorption5, 359.pdf](A/Adsorption5,%20359.pdf)

Abstract: Adsorption processes are gaining interest as methods of purifying industrial effluents. Most industries discharge effluents containing several components. The adsorption of phenol and m-cresol mixtures from aqueous solutions onto a macroporous polymeric adsorbent, Duolite ES-861, was investigated experimentally in a fixed-bed adsorber for different flowrates, feed concentrations and bed initial conditions (clean or pre-saturated).

The experimental results are presented in this work, where the major objective is placed on the modelling of these fixed bed adsorption experiments using an extended Langmuir isotherm equation for two components, based on single component equilibrium data obtained for phenol and m-cresol.

The model presented in this paper takes into account axial dispersion of the liquid phase, film diffusion and intraparticle mass transfer and successfully simulates the adsorption behaviour of the phenol and m-cresol mixtures.

Keywords: Binary Adsorption, Polymeric Adsorbents, Fixed Bed Adsorption, Activated Carbon, Aqueous-Solution

Ho, Y.S. and McKay, G. (1999), Competitive sorption of copper and nickel ions from aqueous solution using peat. *Adsorption-Journal of the International Adsorption Society*, **5** (4), 409-417.

Full Text: [A\Adsorption5, 409.pdf](A/Adsorption5,%20409.pdf)

Abstract: Bicomponent aqueous solutions of copper and nickel ions have been used to investigate the sorption of metal ions onto peat. Peat, a low cost sorbent, has shown a high capacity for the sorption of single component metal ions attributed to extensive carboxylic acids within its structure. Copper and nickel ions were selected as typical metals in the effluents of electroplating industries. The effects of competitive sorption in batch systems were studied at various metal ion concentrations. In this study the Butler and Ockrent model was modified using a coefficient, eta. Two models were developed based on the interaction coefficient eta. The first model incorporates a constant fixed eta factor for each metal ion into the Butler-Ockrent equation. The second model incorporates a variable eta factor into the Butler-Ockrent equation; this interaction factor varies as a function of sorbent surface coverage. Predicted equilibrium data are found to be in excellent agreement with experimental values using both modified models for various mole ratios of copper and nickel ions in competitive sorption.

Keywords: Competitive Sorption, Copper, Nickel, Peat, Isotherm, Heavy-Metal Accumulation, Sphagnum Moss Peat, Activated Carbon, Equilibrium Adsorption, Single, Model, Isotherms, Removal, Sphagnaceae, Selectivity

Carta, G. and Lewus, R.K. (2000), Film model approximation for multicomponent adsorption. *Adsorption-Journal of the International Adsorption Society*, **6** (1), 5-13.

Full Text: [A\Adsorption6, 5.pdf](A/Adsorption6,%205.pdf)

Abstract: An approximate rate equation based on a film-model representation of diffusional mass transfer is developed to describe the kinetics of multicomponent adsorption. The model describes mass transfer as a pseudo-steady state diffusion process through a flat film of thickness equal to one fifth of the particle radius. Starting with an irreversible thermodynamics description of multicomponent diffusion, the flux relationships are integrated across the film yielding analytical expressions for the rate of mass transfer in a multicomponent adsorption system, when adsorption equilibria are described by the extended Langmuir isotherm. The new approximate rate equation can be conveniently used in the numerical simulation of adsorption systems with concentration-dependent micropore or surface diffusivity, and describes the effects of diffusional flux coupling. Results of accuracy comparable with that obtained when using the classical linear-driving-force approximation for systems with constant diffusivities are obtained with this new rate equation for both batch and fixed-bed adsorption calculations. A generalization of the approach based on the Gibbs adsorption isotherm describes mass transfer rates in terms of the spreading-pressure gradient and provides an extension to other multicomponent isotherm forms.

Keywords: Multicomponent Adsorption, Diffusion, Maxwell-Stefan Model, Linear Driving Force Approximation, Langmuir Isotherm, Pressure Swing Adsorption, Separation Process, Diffusion, Mixtures, Thermodynamics, Kinetics

Sircar, S. and Hufton, J.R. (2000), Why does the Linear Driving Force model for adsorption kinetics work? *Adsorption-Journal of the International Adsorption Society*, **6** (2), 137-147.

Full Text: [A\Adsorption6, 137.pdf](A/Adsorption6,%20137.pdf)

Abstract: The Linear Driving Force (LDF) model for gas adsorption kinetics is frequently and successfully used for analysis of adsorption column dynamic data and for adsorptive process designs because it is simple, analytic, and physically consistent. Yet, there is a substantial difference in the characteristics of isothermal batch uptake curves on adsorbent particles by the LDF and the more rigorous Fickian Diffusion (FD) model. It is demonstrated by using simple model systems that the characteristics of the adsorption kinetics at the single pore or the adsorbent particle level are lost in (a) evaluating overall uptake on a heterogeneous porous solid, (b) calculating breakthrough curves from a packed adsorbent column, and (c) establishing the efficiency of separation by an adsorptive process due to repeated averaging of the base kinetic property. That is why the LDF model works in practice.

Keywords: Adsorption, Kinetics, Linear Driving Force Model, Process Design, Intraparticle Mass-Transfer, Isotope-Exchange Technique, Pressure Swing Adsorption, Cyclic Adsorption, Approximation, Desorption, Diffusion, Simulation, Equilibria, Particle

Zhu, W., Kapteijn, F. and Moulijn, J.A. (2000), Equilibrium adsorption of light alkanes in silicalite-1 by the inertial microbalance technique. *Adsorption-Journal of the International Adsorption Society*, **6** (2), 159-167.

Full Text: [A\Adsorption6, 159.pdf](A/Adsorption6,%20159.pdf)

Abstract: The equilibrium adsorption of the light alkanes methane, ethane, propane, n-butane, and i-butane in silicalite-1 has been investigated using the TEOM technique. Either a conventional or a dual-site Langmuir isotherm appropriately describes the equilibrium data. Good agreement with the literature data determined by other techniques indicates the TEOM is a reliable technique. The adsorption of i-butane in silicalite-1 reveals the discrete preferential molecular siting, implying a discrete-dual-structural heterogeneity for light alkanes in silicalite-1.

Keywords: Silicalite-1, Adsorption, TEOM, Alkanes, Isosteric Heat, Adsorption Entropy, Branched Alkanes, Sorption

Lee, M.A., Weber, S.E., Wittmer, D., Koc, R., Dolan, N. and Migone, A.D. (2000), Adsorption isotherm studies on titanium carbide powders. *Adsorption-Journal of the International Adsorption Society*, **6** (3), 213-218.

Full Text: [A\Adsorption6, 213.pdf](A/Adsorption6,%20213.pdf)

Abstract: We have used adsorption isotherms to perform a comparative study of the substrate quality of five groups of titanium carbide powder, manufactured following different procedures. The isotherms were measured in an automated setup at 77.3 K using methane and argon as the adsorbates. We determined the specific surface area of each of the powders studied. We also determined whether or not there was evidence of steps (indicative of layer-by-layer adsorption) in each set of adsorption data. The isothermal compressibilities of the adsorbed films were determined from the data measured for each sample. Adsorption measurements were also conducted to determine the effect that heating the powders under vacuum had on the resulting substrate quality.

Keywords: Adsorption Isotherms, Titanium Carbide, Nitride, Films

Ruthven, D.M. (2000), The rectangular isotherm model for adsorption kinetics. *Adsorption-Journal of the International Adsorption Society*, **6** (4), 287-291.

Full Text: [A\Adsorption6, 287.pdf](A/Adsorption6,%20287.pdf)

Abstract: The transient uptake response of an adsorbent particle, subjected to a step change in surface concentration, is considered. It is shown that, when the isotherm is highly favorable, the theoretical curves derived for a Langmuirian system reduce asymptotically to the much simpler form for a rectangular isotherm. The simple rectangular model provides a useful approximation even when the form of the actual isotherm is quite far from the rectangular limit.

Keywords: Diffusion, Shrinking Core, Rectangular Isotherm, Molecular-Sieves, Sorption

Doula, M., Ioannou, A. and Dimirkou, A. (2000), Thermodynamics of copper adsorption-desorption by Ca-kaolinite. *Adsorption-Journal of the International Adsorption Society*, **6** (4), 325-335.

Full Text: [A\Adsorption6, 325.pdf](A/Adsorption6,%20325.pdf)

Abstract: The temperature effect on Cu adsorption and desorption on kaolinite has been investigated at four temperatures (8 degreesC, 25 degreesC, 30 degreesC and 40 degreesC). The clay sample was saturated with Ca. Copper was sorbed from solutions containing eleven Cu concentrations between 0.0010 and 0.0211 M, equilibrated for 2 days. Cu adsorption decreased, but desorption increased with increasing temperature, indicating that adsorption is an exothermic process while desorption is endothermic. These conclusions are confirmed by the values of DeltaH(0) estimated for adsorption and desorption.

The initial copper concentration is a significant factor influencing mainly the adsorption process, which is spontaneous (DeltaG(0) < 0) only for low initial Cu concentrations. The desorption process is spontaneous for all Cu concentrations. DeltaS(0) values have also been calculated. Experimental adsorption data were successfully fitted to the Freundlich isotherm and to the Gouy-Chapman model in order to express the process quantitatively.

Keywords: Copper, Ca-Koalinite, Adsorption, Desorption, Thermodynamics, H System, Hematite, Exchange, Goethite, Calcium

? Yong, Z., Mata, V.G. and Rodrigues, A.E. (2001), Adsorption of carbon dioxide on chemically modified high surface area carbon-based adsorbents at high temperature. *Adsorption-Journal of the International Adsorption Society*, **7** (1), 41-50.

Full Text: [2001\Adsorption7, 41.pdf](2001/Adsorption7,%2041.pdf)

Abstract: The adsorption capacity of carbon dioxide on high surface area carbon-based adsorbents before and after chemical modification at 28 degreesC and 300 degreesC have been studied. The high adsorption capacity adsorbents for carbon dioxide at high temperature have been developed by introducing MgO and S-CaO-MgO on carbon-based adsorbents. Their adsorption capacities for carbon dioxide were 0.28 and 0.22 m mol/g at 300 degreesC, 1 Bar, respectively.

Keywords: Activated Carbon, Adsorption, Capacity, Carbon, Carbon Dioxide, Carbon-Based Adsorbent And High Temperature, Chemical, Chemical Modification, CO2 Adsorption, Enhanced Reaction Process, Gas, Methane, MgO, Mixtures, Molecular-Sieve, Separation, Surface Area, Temperature

Juang, R.S., Tseng, R.L. and Wu, F.C. (2001), Role of microporosity of activated carbons on their adsorption abilities for phenols and dyes. *Adsorption-Journal of the International Adsorption Society*, **7** (1), 65-72.

Full Text: [A\Adsorption7, 65.pdf](A/Adsorption7,%2065.pdf)

Abstract: The amounts of adsorption of two commercial dyes, phenol, and 4-chlorophenol from water on activated carbons were measured at 30 degreesC. The carbons were prepared from cane (bagasse) piths and were activated by steam. The activation temperature and time were in the ranges of 750-840 degreesC and 2 h, respectively. It was shown that the isotherm data of all four solutes could be well fitted by the Langmuir equation under the conditions studied. The adsorption capacities of the solutes were correlated with the microporosity properties of the activated carbons including micropore volume and external surface area. Finally, the adsorption characteristics of the present carbons was compared with those prepared from various agricultural wastes.

Keywords: Adsorption Equilibrium, Activated Carbons, Microporosity, Dyes, Phenols, Cane Piths, Aqueous-Solutions, Surface-Area, Equilibrium, Dyestuffs, Cost, Physisorption, Adsorbents, Removal

Choi, B.S., Park, G.I., Kim, J.H., Lee, J.W. and Ryu, S.K. (2001), Adsorption equilibrium and dynamics of methyl iodide in a silver ion-exchanged zeolite column at high temperatures. *Adsorption-Journal of the International Adsorption Society*, **7** (2), 91-103.

Full Text: [A\Adsorption7, 91.pdf](A/Adsorption7,%2091.pdf)

Abstract: An extensive evaluation was carried out to determine the optimal silver ion-exchanged level for the removal of methyl iodide at high temperatures up to 400 degreesC. Based on the degree of silver utilization, the optimal silver loading and temperature were about 10 wt% and 175 degreesC, respectively. The physical and chemical properties of silver ion-exchanged zeolite were characterized by instrumental analysis such as BET, TG/DTA and SEM-EDS. Adsorption dynamics was also studied at different temperatures, and methyl iodide concentrations. A simple dynamic model was formulated by employing the linear driving force (LDF) approximation inside adsorbent particles, and the nonisothermal Langmuir-Freundlich equation. The model equations were solved numerically by an orthogonal collocation method. The proposed dynamic model satisfactorily simulated the experimental breakthrough results.

Keywords: High Temperature, Methyl Iodide, Silver Ion-Exchanged Zeolite, Adsorption Equilibrium, Dynamic Model

Palacios, V.M., Caro, I. and Pérez, L. (2001), Application of ion exchange techniques to industrial process of metal ions removal from wine. *Adsorption-Journal of the International Adsorption Society*, **7** (2), 131-138.

Full Text: [A\Adsorption7, 131.pdf](A/Adsorption7,%20131.pdf)

Abstract: In this article, the application of selective ion exchange resins to the industrial metals removal of wine has been studied as an alternative to the “blue clarification” technique. In this sense, under the perspective of using this technology in the metals removal of sherry wines, a set of experiments at laboratory and pilot plant scale have been carried out. The study shows the behavior of several alkaline ions, metal ions and other parameters (pH, colour, protein index, etc.) during the process. Moreover, using the general theoretical model for continuous multistage processes, this study contemplates also the engineering design and the economic balance of the industrial process based on ion exchange columns. The experimental results demonstrates that ion exchange techniques are more effective and economic than “blue clarification” for metals removal of sherry wines. The proposed practice does not produce alterations in the qualities of the products; it achieves stability enough and also permits an important decrease of the contents of heavy metals.

Keywords: Ion Exchange, Metal Removal, Iminodiacetic Resin, Wine Oxidative Stabilization, Acid Cellulose Filters

Notes: highly cited

Ho, Y.S. and Chiang, C.C. (2001), Sorption studies of acid dye by mixed sorbents. *Adsorption-Journal of the International Adsorption Society*, **7** (2), 139-147.

Full Text: [A\Adsorption7, 139.pdf](A/Adsorption7,%20139.pdf)

Abstract: The sorption of Acid Blue 9 onto the mixture of activated clay and activated carbon has been studied in terms of pseudo-first order and pseudo-second order chemical sorption processes. The batch sorption model, based on the assumption of a pseudo-second order mechanism, has been developed to predict the rate constant of sorption and the equilibrium capacity with the effect of initial dye concentration, mass of mixed sorbent, temperature and initial solution pH. The rates of sorption were found to conform to pseudo-second order kinetics with good correlation. Batch isotherm studies showed that the sorption of Acid Blue 9 by the mixed sorbent from aqueous solution was described by the Langmuir isotherm equation. A comparison of the evaluated equilibrium capacity of sorption has been made by the pseudo-second order rate equation as well as by the Langmuir isotherm and operating line method. In addition, an activation energy of sorption has also been determined based on the pseudo-second order rate constants.

Keywords: Acid Dye, Activated Carbon, Adsorption, Anionic Dyes, Aqueous-Solutions, Basic-Dyes, Biosorption, China-Clay, Dye, Equilibrium, Fly-Ash, Kinetics, Langmuir Isotherm, Mixed Sorbent, Pseudo-First Order, Pseudo-Second Order, Removal, Sorption, Water Hyacinth Roots, Wollastonite

Choy, K.K.H., Porter, J.F. and McKay, G. (2001), A film-pore-surface diffusion model for the adsorption of acid dyes on activated carbon. *Adsorption-Journal of the International Adsorption Society*, **7** (3), 231-247.

Full Text: [A\Adsorption7, 231.pdf](A/Adsorption7,%20231.pdf)

Abstract: The sorption of acid dyes from aqueous effluents onto activated carbon has been studied. The effects of initial dye concentration and activated carbon mass on the rate of Acid Blue 80, Acid Red 114 and Acid Yellow 117 removal have been investigated. A three-resistance mass transport model based on film, pore and surface diffusion control has been applied to model the concentration decay curves. The model incorporates an effective diffusion coefficient D(e)ff, which is dependant on the equilibrium solid phase concentration or fractional surface coverage. The results of the film-pore-surface diffusion model are compared with the data obtained from the basic film-pore diffusion model. It has been found that the film-pore-surface diffusion model provides a major improvement over the data correlated by the film-pore diffusion model. Also, the relationship between surface diffusion and fractional surface coverage has been investigated for the adsorption of acid dyes on activated carbon.

Keywords: Film-Pore-Surface Diffusion, Batch Sorption, Surface Coverage, Acid Dyes, Activated Carbon, Agricultural By-Products, Highly Porous Chitosan, Color Removal, Bagasse Pith, Textile Effluents, Aqueous-Solutions, Metal-Ions, Equilibria, Sorption, Particles

Choy, K.K.H., Porter, J.F. and McKay, G. (2001), A film-pore-surface diffusion model for the adsorption of acid dyes on activated carbon. *Adsorption-Journal of the International Adsorption Society*, **7** (4), 305-317.

Full Text: [A\Adsorption7, 305.pdf](A/Adsorption7,%20305.pdf)

Abstract: The sorption of acid dyes from aqueous effluents onto activated carbon has been studied. The effects of initial dye concentration and activated carbon mass on the rate of Acid Blue 80, Acid Red 114 and Acid Yellow 117 removal have been investigated. A three-resistance mass transport model based on film, pore and surface diffusion control has been applied to model the concentration decay curves. The model incorporates an effective diffusion coefficient D(e)ff, which is dependant on the equilibrium solid phase concentration or fractional surface coverage. The results of the film-pore-surface diffusion model are compared with the data obtained from the basic film-pore diffusion model. It has been found that the film-pore-surface diffusion model provides a major improvement over the data correlated by the film-pore diffusion model. Also, the relationship between surface diffusion and fractional surface coverage has been investigated for the adsorption of acid dyes on activated carbon.

Keywords: Film-Pore-Surface Diffusion, Batch Sorption, Surface Coverage, Acid Dyes, Activated Carbon, Agricultural By-Products, Highly Porous Chitosan, Color Removal, Bagasse Pith, Textile Effluents, Aqueous-Solutions, Metal-Ions, Equilibria, Sorption, Particles

Rudzinski, W. and Panczyk, T. (2002), The Langmuirian adsorption kinetics revised: A farewell to the XXth century theories? *Adsorption-Journal of the International Adsorption Society*, **8** (1), 23-34.

Full Text: [A\Adsorption8, 23.pdf](A/Adsorption8,%2023.pdf)

Abstract: A brief historical review of the development of the theoretical approaches to the kinetics of gas adsorption/desorption on/from the solid surfaces is presented. The attention is focused on new approaches, challenging the classical theories based on the ideas of Absolute Rate Theory (ART). These new approaches relate the adsorption/desorption kinetics to the chemical potentials of the molecules in the gas and adsorbed states. Among them the so-called Statistical Rate Theory (SRT) has the most rigorous theoretical foundations. That new approach predicts that depending on experimental conditions one can have a variety of kinetic equations corresponding to the Langmuir equilibrium adsorption isotherm.

Keywords: Gas Adsorption, Adsorption Kinetics, Langmuirian Kinetics, Statistical Rate Theory, Statistical Rate Theory, Surface Energetic Heterogeneity, Interfacial Transport, Solid-Surfaces, TPD Spectra, Quantitative Interpretation, Desorption-Kinetics, Catalysts Surfaces, 2-Phase Adsorbate, Readsorption

Nieszporek, K. (2002), On the correct use of the Dubinin-Astakhov equation to study the mixed-gas adsorption equilibria. *Adsorption-Journal of the International Adsorption Society*, **8** (1), 45-57.

Full Text: [A\Adsorption8, 45.pdf](A/Adsorption8,%2045.pdf)

Abstract: This paper presents the possibilities of Integral Equation (IE) approach to study the mixed-gas adsorption equilibria. As a result, the generalizations of Dubinin-Astakhov equation for the case of mixed-gas adsorption are presented. These new equations are examined using a few adsorption systems recently published in literature.

Keywords: Adsorption, Isotherms, Integral Equation Approach, Heterogeneity, Dubinin-Astakhov Equation, Random Heterogeneous Surfaces, Describes Adsorption, Activated Carbon, Solid-Surfaces, High-Pressure, Mixtures, Binary, Single, Model

Juang, R.S. and Shao, H.J. (2002), Effect of pH on competitive adsorption of Cu(II), Ni(II), and Zn(II) from water onto chitosan beads. *Adsorption-Journal of the International Adsorption Society*, **8** (1), 71-78.

Full Text: [A\Adsorption8, 71.pdf](A/Adsorption8,%2071.pdf)

Abstract: The amounts of adsorption of Cu2+, Ni2+, and Zn2+ from single, binary, and tertiary nitrate solutions onto glutaraldehyde cross-linked chitosan beads were measured. The beads had an average particle size and pore volume of 2 mm and 0.06 cm3/g, respectively, and had a BET surface area of 60 m2/g. All experiments were performed at 298 K as a function of initial pH (2.0-5.0), total metal concentration (0.77-17.0 mol/m3), and molar concentration ratio (0.25-4) in the aqueous phase. It was shown that the amount of metal adsorption generally increased with increasing solution pH. Competitive adsorption was significant in binary and tertiary systems when Cu2+ was present. The selectivity factor reached maximum in an equilibrium pH range of 5.1-5.3 and 4.5-4.9 for the Cu-Ni and Cu-Zn binary systems, respectively. This adsorbent provided a possibility for selective separation of Cu2+ from such multi-component solutions.

Keywords: Competitive Adsorption, Selectivity, Chitosan Beads, Cu(II), Ni(II), Zn(II), Metal-Ions, Chitin, Equilibrium, Sorption, Derivatives, Biopolymer, Polymers, Removal, Wastes

Ko, D.C.K., Porter, J.F. and McKay, G. (2002), A branched pore model analysis for the adsorption of acid dyes on activated carbon. *Adsorption-Journal of the International Adsorption Society*, **8** (3), 171-188.

Full Text: [A\Adsorption8, 171.pdf](A/Adsorption8,%20171.pdf)

Abstract: A new branched-pore adsorption model has been developed using an external mass transfer coefficient, Kf, an effective diffusivity, Deff, a lumped micropore diffusion rate parameter, Kb, and the fraction of macropores, f, to describe sorption kinetic data from initial adsorbent-adsorbate contact to the long-term adsorption phase. This model has been applied to an environmental pollution problem-the removal of two dyes, Acid Blue 80 (AB80) and Acid Red 114 (AR114), by sorption on activated carbon. A computer program has been used to generate theoretical concentration-time curves and the four mass transfer kinetic parameters adjusted so that the model achieves a close fit to the experimental data. The best fit values of the parameters have been determined for different initial dye concentrations and carbon masses. Since the model is specifically applicable to fixed constant values of these four parameters, a further and key application of this project is to see if single constant values of these parameters can be used to describe all the experimental concentration-time decay curves for one dye-carbon system.

The error analysis and best fit approach to modeling the decay curves for both dye systems show that the correlation between experimental and theoretical data is good for the fixed values of the four fitted parameters. A significantly better fit of the model predictions is obtained when Kf, Kb and f are maintained constant but Deff is varied. This indicates that the surface diffusivity may vary as a function of surface coverage.

Keywords: Adsorption Model, Acid Dye, Activated Carbon, Macropore, Micropore, Variable Surface Diffusivity, Fixed-Bed Adsorbers, Liquid-Phase Adsorption, Diffusion-Model, Concentration-Dependence, Size Distribution, Basic Dye, Gases, Silica

Özacar, M. and Şengil, İ.A. (2002), Adsorption of acid dyes from aqueous solutions by calcined alunite and granular activated carbon. *Adsorption-Journal of the International Adsorption Society*, **8** (4), 301-308.

Full Text: [A\Adsorption8, 301.pdf](A/Adsorption8,%20301.pdf)

Abstract: Dyestuff production units and dyeing units have always had a pressing need for techniques that allow economical pretreatment for color in the effluent. The effectiveness of adsorption for dye removal from wastewaters had made it an ideal alternative to other expensive treatment options. This paper deals with an investigation on alunite, existing wide reserves in Turkiye and in the world, for dye removal. Calcined alunite was utilized for this study and its performance evaluated against that of granular activated carbon (GAC). The use of calcined alunite for the removal of Acid Blue 40 and Acid Yellow 17 (AB 40 and AY 17) from aqueous solution at different calcination temperature and time, particle size, pH, agitation time and dye concentration has been investigated. The adsorption followed by Langmuir and Freundlich isotherms. The process follows first order adsorption rate expression and the rate constant was found to be 7.65×10-2 and 5.74×10-2 min-1 for adsorption of AB 40 and AY 17 on calcined alunite, and 8.41×10-2 and 10.04×10-2 min-1 for adsorption of AB 40 and AY 17 on GAC, respectively. The equilibrium saturation adsorption capacities were 212.8 mg dye/ g calcined alunite and 151.5 mg dye/ g calcined alunite for AB 40 and AY 17, respectively. The adsorption capacities were found to be 57.47 mg and 133.3 mg dye per g of GAC for AB 40 and AY 17, respectively. The results indicate that, for the removal of acid dye, calcined alunite was most effective adsorbent, although comparable dye removals were exhibited by GAC.

Keywords: Acid Dye, Calcined Alunite, Adsorption Dynamics, Isotherm, Color Removal, Fly-Ash, Chrome Dye, Removal, Equilibrium, Adsorbents, Clay, Ore

Carta, G. (2003), Adsorption calculations using the film model approximation for intraparticle mass transfer. *Adsorption-Journal of the International Adsorption Society*, **9** (1), 55-65.

Full Text: [A\Adsorption9, 55.pdf](A/Adsorption9,%2055.pdf)

Abstract: An approximate rate equation based on a film-model representation of diffusional mass transfer has been developed to describe the kinetics of multicomponent adsorption. The model describes mass transfer as a pseudo-steady state diffusion process through a flat film of thickness equal to one fifth of the particle radius. The flux relationships are integrated across the film yielding analytical expressions for the rate of mass transfer in a multicomponent adsorption system. The usefulness of the film model approximation is tested by carrying out calculations for three different practical adsorption systems: the adsorption of n-pentane and n-heptane mixtures on NaCaA zeolite discussed by Marutovsky and Bulow (1987); the adsorption of air in molecular sieve RS-10 discussed by Farooq et al. (1993); and the separation of air in a kinetically-controlled nitrogen PSA process discussed by Farooq and Ruthven (1990) and Sundaram and Yang (1998). In each case, the film model approximation predicts the expected trends accounting for the coupling of diffusion fluxes in the adsorbed phase.

Keywords: Multicomponent Adsorption, Coupled Diffusion, Linear Driving Force Approximation, Pressure Swing Adsorption, Pressure Swing Adsorption, Separation Process, Numerical-Simulation, Diffusion, Kinetics, Mixtures

García-Araya, J.F., Beltrán, F.J., Álvarez, P. and Masa, F.J. (2003), Activated carbon adsorption of some phenolic compounds present in agroindustrial wastewater. *Adsorption-Journal of the International Adsorption Society*, **9** (2), 107-115.

Full Text: [A\Adsorption9, 107.pdf](A/Adsorption9,%20107.pdf)

Abstract: Single solute and simultaneous experimental adsorption isotherms of three phenolic compounds: gallic acid, p-hydroxybenzoic acid and syringic acid, have been investigated at 20, 30 and 40°C, using a bituminous coal based activated carbon. Regardless of temperature, the capacity of the activated carbon used to adsorb these compounds presented the following order: syringic acid > p-hydroxybenzoic acid > gallic acid. The increase of temperature slightly favored the adsorption capacity of the phenolic compounds. In binary and ternary component adsorption, experimental data suggest that interactions between adsorbates improve the adsorption capacity of some of the phenolic acid compounds. On the contrary, at high organic concentrations, adsorbed gallic acid was partially removed from the activated carbon surface because of the presence of the other components.

Keywords: Activated Carbon, Adsorption Equilibrium, Phenolic Acid Compounds, Gallic Acid, p-Hydroxybenzoic Acid, Syringic Acid

Özacar, M. (2003), Equilibrium and kinetic modelling of adsorption of phosphorus on calcined alunite. *Adsorption-Journal of the International Adsorption Society*, **9** (2), 125-132.

Full Text: [A\Adsorption9, 125.pdf](A/Adsorption9,%20125.pdf)

Abstract: The adsorption of phosphorus onto calcined alunite has been studied. Its equilibrium isotherm has been measured. The isotherm was determined by shaking 1.0 g calcined alunite, particle size range 90 - 150 μm, with 100 mL phosphorus solution of initial concentrations from 0.5 to 2.5 mmol/L. The water bath shaking a constant rate of 200-rpm was used and the temperature maintained at 298±2 K. A contact time of 120 min was required to achieve equilibrium. The experimental isotherm data were analyzed using the Langmuir, Freundlich, Temkin and Dubinin-Radushkevich equations. The monolayer adsorption capacity is 1.355 mmol P per g calcined alunite. Three simplified kinetic models including a pseudo first-order equation, pseudo second-order equation and intraparticle diffusion equation were selected to follow the adsorption process. Kinetic parameters, rate constants, equilibrium sorption capacities and related correlation coefficients, for each kinetic model were calculated and discussed. It was shown that the adsorption of phosphorus could be described by the pseudo second-order equation.

Keywords: Alunite, Adsorption Isotherms and Kinetics, Phosphorus, Pseudo Second-Order, Intraparticle Diffusion, Fly-Ash, Phosphate Adsorption, Aqueous-Solutions, Activated Carbon, Acid Dye, Removal, Sorption, Water, Chitosan, Surface

Petkovska, M. and Petkovska, L.T. (2003), Use of nonlinear frequency response for discriminating adsorption kinetics mechanisms resulting with bimodal characteristic functions. *Adsorption-Journal of the International Adsorption Society*, **9** (2), 133-142.

Full Text: [A\Adsorption9, 133.pdf](A/Adsorption9,%20133.pdf)

Abstract: One of the characteristic examples of the inability of the classical linear frequency response (FR) method to identify the correct kinetic mechanism is adsorption of some substances (p-xylene, 2-butane, propane or n-hexane) on silicalite-1. The linear FR resulted with bimodal FR characteristic functions, which fitted equally well to three different kinetic models: nonisothermal micropore diffusion, two independent isothermal diffusion processes, and an isothermal diffusion-rearrangement process. We show that the second order frequency response functions (FRFs), obtained from the nonlinear FR, can be used for discrimination among these three mechanisms. Starting from the nonlinear models, we derive the theoretical expressions for the first and second order FRFs corresponding to these three mechanisms and show that different shapes of the second order FRFs are obtained for each mechanism. This would enable identification of the real mechanism from nonlinear FR data.

Keywords: Nonlinear Mathematical Models, Nonlinear Frequency Response Method, Bimodal Characteristic Functions, Isothermal and Nonisothermal Models, Diffusion, Silicalite-1, Systems

? Ulusoy, U., Simsek, S. and Ceyhan, O. (2003), Investigations for modification of polyacrylamide-bentonite by phytic acid and its usability in Fe3+, Zn2+ and UO22+ adsorption. *Adsorption-Journal of the International Adsorption Society*, **9** (2), 165-175.

Full Text: [2003\Adsorption9, 165.pdf](2003/Adsorption9,%20165.pdf)

Abstract: Composite of polyacrylamide-bentonite (PAA-B) was prepared by direct polymerisation of PAA in a suspension of bentonite (B). Adsorption and thermodynamic features of phytic acid (Phy) adsorption onto B, PAA and PAA-B, and those of Fe3+, Zn2+, UO22+ adsorption onto PAA-B and its modification by Phy (PAA-B-Phy) have been investigated. The reusability, storagability, ion selectivity and recoverability of sorbed ions with 1 M HCl have also been considered. The chemical and physical structure of adsorbents has been characterised by means of FT-IR and XRD. All adsorption isotherms for Phy and the ions were L-type of the Giles classification except, the one which is S type for adsorption of Phy onto PAA. The maximum adsorption capacities for the ions adsorbed were in order of UO22+ > Fe3+ > Zn2+ for PAA-B and Zn2+ > Fe3+ > UO22+ for PAA-B-Phy. Langmuir equilibrium constants for the adsorption of ions onto PAA-B-Phy were significantly higher than those found for PAA-B; the magnitude of increase for UO22+ was about 100. The thermodynamic parameters indicated that adsorption reactions are spontaneous in terms of adsorption free enthalpy. The chemical structure of PAA-B-Phy was not changed at the end of the studies of reusability and storagability. The composite was selective for UO22+ of the ions of interest. The composite of PAA-B and its modification by Phy have been used for the first time in this investigation. It is proposed that the composites can be practically used in the investigations and applications of adsorption.

Keywords: Adsorption, Adsorption Isotherms, Applications, Bentonite, Chemical, Classification, Clay, Composite, Enhancement, Equilibrium, Features, FT-IR, FTIR, Gels, HCl, Ion, Isotherms, Mechanisms, Metal Adsorption, Nanocomposites, Parameters, Physical Structure, Phytate, Phytic Acid, Poly(Acrylamide), Polyacrylamide, Polymerisation, Selective, Selectivity, Sorbed, Structure, Suspension, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Uranium, XRD

Valenzuela-Calahorro, C., Navarrete-Guijosa, A., Stitou, M. and Cuerda-Correa, E.M. (2003), Retention of progesterone by an activated carbon: Study of the adsorption kinetics. *Adsorption-Journal of the International Adsorption Society*, **10** (1), 19-28.

Full Text: [A\Adsorption10, 19.pdf](A/Adsorption10,%2019.pdf)

Abstract: The process by which progesterone in an ethanol solution is retained by Merck granular activated carbon involves a reversible mechanism that conforms to a kinetic equation of unity partial order in both the progesterone concentration in solution, the coverage fraction (θ) of the adsorbing surface and (1-θ). Over the temperature range 10–40°C, the specific adsorption rate varies from 5.8.10-5 to 1.3.10-4 s-1. The thermodynamic activation functions for the process are ΔH\* = 41.6 kJ/mol and ΔS\* = -0.20 kJ/K mol. The rate of the adsorption-desorption process is primarily determined by diffusion of progesterone molecules in the pores of the sorbent.

Keywords: Adsorption, Activated Carbon, Kinetics, Progesterone

Nouri, S. and Haghseresht, F. (2004), Research on the BET surface area and packing of molecules on the activated carbon. *Adsorption-Journal of the International Adsorption Society*, **10** (1), 69-77.

Full Text: [A\Adsorption10, 69.pdf](A/Adsorption10,%2069.pdf)

Abstract: Adsorption of different aromatic compounds (two of them are electrolytes) onto an untreated activated carbon (F100) is investigated. The experimental isotherms are fitted into Langmuir homogenous and heterogeneous Model. Theoretical maximum adsorption capacities that are based on the BET surface area of the adsorbent cannot be close to the real value. The affinity and the heterogeneity of the adsorption system observed to be related to the pKa of the solutes. The maximum adsorption capacity (Qmax) of activated carbon for each solute dependent on the molecular area as well as the type of functional group attached on the aromatic compound and also pH of solution. The arrangement of the molecules on the carbon surface is not face down. Furthermore, it is illustrated that the packing arrangement is most likely edge to face (sorbate-sorbent) with various tilt angles.

For characterization of the carbon, the N2 and CO2 adsorption were used. X-ray Photoelectron Spectroscopy (XPS) measurement was used to surface elemental analysis of activated carbon.

Keywords: BET Surface Area, Molecular Size, Langmuir Equation, Activated Carbon, Spectrophotometer, Characterization of Activated Carbon

Nouri, S. and Haghseresht, F. (2004), Adsorption of *p*-nitrophenol in untreated and treated activated carbon. *Adsorption-Journal of the International Adsorption Society*, **10** (1), 79-86.

Full Text: [A\Adsorption10, 79.pdf](A/Adsorption10,%2079.pdf)

Abstract: The adsorption of p-nitrophenol in one untreated activated carbon (F100) and three treated activated carbons (H2, H2SO4 and Urea treated F100) was carried out at undissociated and dissociated conditions.

To characterize the carbon, N2 and CO2 adsorption were used. X-ray Photoelectron Spectroscopy (XPS) was used to analyze the surface of the activated carbon.

The experimental isotherms are fitted via the Langmuir homogenous model and Langmuir binary model. Variation of the model parameters with the solution pH is studied. Both Qmax and the adsorption affinity coefficient (K1) were dependent on the PZC of the carbons and solution pH. The Effect of pH must be considered due to its combined effects on the carbon surface and on the solute molecules. Adsorption of p-nitrophenol at higher pH was found to be dependent on the concentration of the anionic form of the solute.

Keywords: Adsorption, P-Nitrophenol, Treated Activated Carbon, Langmuir Equation, Characterization of Activated Carbon

Brandani, F., Rouse, A., Brandani, S. and Ruthven, D.M. (2004), Adsorption kinetics and dynamic behavior of a carbon monolith. *Adsorption-Journal of the International Adsorption Society*, **10** (2), 99-109.

Full Text: [A\Adsorption10, 99.pdf](A/Adsorption10,%2099.pdf)

Abstract: The zero length column (ZLC) method has been applied to study the adsorption and diffusion of CO2 in a carbon monolith adsorbent. ZLC desorption curves, measured over a wide range of flow rates, are shown to be very well accounted for assuming a linear equilibrium isotherm with the kinetics controlled by diffusion into a parallel sided slab. The data, at all flow rates, are characterized by a single pair of parameters (K and Ds). Diffusivities for a He carrier are about double those for a N2 carrier reflecting both the difference in molecular diffusivities and some contribution from Knudsen diffusion. Breakthrough curves for CO2-He and CO2-N2 were also measured for columns packed with the monolith adsorbent. Both the equilibrium and diffusion parameters derived from analysis of the breakthrough curves in accordance with the Golay/Spangler models are consistent with the values derived from the ZLC measurements. Dispersion in the monoliths is shown to be controlled by mass transfer resistance rather than axial mixing.

Keywords: LC, CO2, Carbon Monolith

Cossich, E.S., da Silva, E.A., Tavares, C.R.G., Filho, L.C. and Ravagnani, T.M.K. (2004), Biosorption of chromium(III) by biomass of seaweed *Sargassum* sp. in a fixed-bed column. *Adsorption-Journal of the International Adsorption Society*, **10** (2), 129-138.

Full Text: [A\Adsorption10, 129.pdf](A/Adsorption10,%20129.pdf)

Abstract: This work aimed at modeling chromium biosorption using the biomass of seaweed *Sargassum* sp. in a fixed-bed column. The mathematical model used was obtained from the mass balance of the component in the liquid phase and in the biosorbent material. The effects of both axial dispersion in the column and the resistance to mass transfer in the solid were considered for the solution of the partial differential equations of the model, using the Galerkin method on finite elements. To represent the equilibrium data of the batch system the Langmuir isotherm were used. The chromium ion adsorption capacity of the seaweed Sargassum sp., at a temperature of 30°C and pH 3.5, was 2.61 mmol/g. The model performance was evaluated from experimental data obtained at 30°C for flow rates of 2, 6 and 8 mL/min. The parameters of the model, mass transfer and axial dispersion coefficients, were adjusted from these experimental data. The model proved adequate to describe chromium biosorption dynamics in fixed-bed columns.

Keywords: Biosorption, Chromium, Modeling, Fixed-Bed Column, Sargassum

Ho, Y.S. (2004), Pseudo-isotherms using a second order kinetic expression constant. *Adsorption-Journal of the International Adsorption Society*, **10** (2), 151-158.

Full Text: [A\Adsorption10, 151.pdf](A/Adsorption10,%20151.pdf)

Abstract: The kinetics of four sorption systems, Cu/tree fern, Pb/tree fern, AB9/activated clay and BR18/activated clay have been studied based on the assumption of a pseudo-second order rate law. Pseudo-isotherms using the pseudo-second order kinetic expression constant have been developed to describe the four liquid-solid sorption systems. The experimental results have been analyzed using a pseudo-Langmuir and a pseudo-Redlich-Peterson isotherm. Both isotherms were found to represent the measured sorption data well. According to the evaluation using the pseudo-Langmuir equation, the monolayer sorption capacities were obtained to be 13.9, 46.6, 124 and 105 mg g-1 for copper, lead, AB9 and BR18 respectively.

Keywords: Pseudo-Isotherm, Pseudo-Second Order, Kinetics, Equilibrium, Adsorption, Aqueous-Solution, Tree Fern, Metal-Ions, Sorption, Removal, Equilibrium, Adsorption, Dye

? Barros, M.A.S.D., Arroyo, P.A., Sousa-Aguiar, E.F. and Tavares, C.R.G. (2004), Thermodynamics of the exchange processes between K+, Ca2+ and Cr3+ in zeolite NaA. *Adsorption-Journal of the International Adsorption Society*, **10** (3), 227-235.

Full Text: [2004\Adsorption10, 235.pdf](2004/Adsorption10,%20235.pdf)

Abstract: In this paper it was analyzed the ion exchange isotherm of K+, Ca2+ and also Cr3+ ions with NaA zeolites at three temperatures: 30, 45 and 60degreesC. The NaA isotherms were favorable for the metal cations studied. Differences in shape are due to the different influence of temperature in the interaction of the in-going cation with the zeolite framework. As a consequence, sites of different energies were used in the exchange process, which provided non linear Kielland plots. Equilibrium constant, standard free energy, enthalpy and enthopy changes were measured and tabulated. Equilibrium constant is directly proportional to the in-going ion charge. Concerning enthalpy, endothermic and exothermic exchanges were observed due to differences in the cation-framework interaction. The selectivity order based on the standard free energy over the entire temperature range was K+ < Cr3+ < Ca2+, a consequence of different ion exchange mechanisms. It was also noted that the entropy change increases with the polarizibility of the cations.

Keywords: Zeolite A, Ion Exchange, Isotherm, Thermodynamic Data, Chromium, Multicomponent Ion-Exchange, Heavy-Metal Ions, Sodium-Ions, Removal, Isotherms, Cation, Nickel

Zakaria E.S., Ali, I.M. and Aly, H.F. (2004), Adsorption behaviour of 134Cs and 22Na ions on tin and titanium ferrocyanides. *Adsorption-Journal of the International Adsorption Society*, **10** (3), 237-244.

Full Text: [A\Adsorption10, 237.pdf](A/Adsorption10,%20237.pdf)

Abstract: Tin and titanium ferrocyanides were studied as adsorbents for alkali metal ions, viz., 134Cs and 22Na, which represent radioactive wastes. The ferrocyanides were prepared in granular form. The tin version contained 11.2% water, while the titanium version contained 17.7% water. The exchange capacities for Cs+ and Na+ in the hydrated tin version were about 1.5 and 0.7 meq/g, respectively, while those in the titanium version were 2.2 and 1.2 meq/g, respectively. Drying at 250°C decimated those capacities. The diffusional time constant of Cs+ at 25°C, determined via Fick’s second law, was of order of magnitude 1×10-3 s-1, though there were minor differences due to particle size and the form of ferrocyanide. Similarly, the effective diffusivity was of order of magnitude 1×10-8 cm2/s. The titanium version responded slightly faster than the tin version. Likewise, equilibrium measurements in mixtures with sodium nitrate, potassium nitrate, or uranium oxide, showed that the titanium version exhibited significantly greater selectivity for Cs+ than did the tin version. Unfortunately, tests of complete elution of the Cs+ from the ferrocyanides were mostly disappointing. Work continues on that subject.

Keywords: Ion Exchange, Equilibrium, Kinetics, Radioactive Waste Treatment

Bardo, E., Josef, B., Deborah, D. and Yeda, D. (2004), An adsorption isotherm from a micro-state model. *Adsorption-Journal of the International Adsorption Society*, **10** (4), 277-286.

Full Text: [A\Adsorption10, 277.pdf](A/Adsorption10,%20277.pdf)

Abstract: The present study is dedicated to the derivation of an alternative adsorption isotherm for liquid-solid interfaces from a micro-state model, where adsorption is predominantly of a chemical nature. We describe adsorption-desorption on a liquid-solid interface starting from a partition function. In the new model the surface site occupation number is controlled by the Pauli principle (monolayer condition) and additional an attractive or repulsive surface potential, which depends on the overall surface coverage (nonlinearity). The effective potential represents adsorbate adsorbent interaction, as well as an influence of adsorbate adsorbate interactions on the surface potential. A Langmuir equivalent isotherm is recovered in the limit of a weak potential. The proposed model and Langmuir’s isotherm are compared using data of humic acid (HA) adsorption on Brazilian Oxisol soil samples. Both models parameterize the experimental data well, but only the new model seems to be self-consistent.

Keywords: Adsorption Isotherm, Liquid-Solid Interface, Micro-State Model, Humic Acid, Oxisol

Yapar, S. and Yilmaz, M. (2004), Removal of phenol by using montmorillonite, clinoptilolite and hydrotalcite. *Adsorption-Journal of the International Adsorption Society*, **10** (4), 287-298.

Full Text: [A\Adsorption10, 287.pdf](A/Adsorption10,%20287.pdf)

Abstract: This work is to study the removal of phenol from aqueous solutions by adsorption using three different adsorbents, clinoptilolite, montmorillonite, and hydrotalcite (HT). Except for montmorillonite, the other adsorbents were treated. Clinoptilolite was modified using cetyltrimethylammonium bromide (CTAB) and hydrotalcite was calcined by heating to 550°C. Adsorption isotherms of phenol on all of the mentioned adsorbents was determined by using the batch equilibration technique and indicated that, the adsorption behavior could be modelled by using the Modified Freundlich equation. The differences observed in the isotherms were explained by the variations in adsorbent-adsorbate interactions under the effects of the different surface structures of adsorbents and the pH dependent ionization behavior of phenol. Calcined hydrotalcite (HTC) was found to be the best among the studied adsorbents since it can adsorb 52% of phenol from a solution containing initially 1 g/L phenol for the 1/100 adsorbent solution ratio while the others can adsorb only 8% of phenol for the same concentration and adsorbent solution ratio.

Keywords: Montmorillonite, Clinoptilolite, Hydrotalcite, Organic Pollutant, Phenol, Adsorption

Kavakli, P.A., Seko, N., Tamada, M. and Güven, O. (2004), A highly efficient chelating polymer for the adsorption of uranyl and vanadyl ions at low concentrations. *Adsorption-Journal of the International Adsorption Society*, **10** (4), 309-315.

Full Text: [A\Adsorption10, 309.pdf](A/Adsorption10,%20309.pdf)

Abstract: A new polymer containing double amidoxime groups per repeating unit was synthesized to enhance the metal ion uptake capacity. The adsorption properties of this new polymeric adsorbent, amidoximated poly(N,N’-dipropionitrile acrylamide), for U(VI), V(V), Cu(II), Co(II) and Ni(II) ions were investigated by batch and flow-through processes at very low concentration levels (ppb). The chelating polymer showed high adsorption capacity for uranyl as well as vanadyl ions. In selectivity studies from a mixture of metal ions in aqueous solutions, the adsorbent showed high selectivity for uranyl and vanadyl ions in the following order: U(VI) > V(V) >>Co(II) = Cu(II) >>Ni(II) as determined by calculating the distribution coefficients D, of corresponding ions. The adsorption of uranyl and vanadyl ions from natural seawater by the new adsorbent was also examined in flow through mode.

Keywords: Chelating Polymer, Poly(Dipropionitrile Acrylamide), Amidoximation, Uranyl, Vanadyl Ion Adsorption

Özer, A., Özer, D. and Ekiz, H.İ. (2004), The equilibrium and kinetic modelling of the biosorption of copper(II) ions on *Cladophora crispata*. *Adsorption-Journal of the International Adsorption Society*, **10** (4), 317-326.

Full Text: [A\Adsorption10, 317.pdf](A/Adsorption10,%20317.pdf)

Abstract: The biosorption of Cu(II) ions on Cladophora crispata was investigated as a function of the initial pH, temperature and initial Cu(II) ion concentration. Algal biomass exhibited the highest Cu(II) uptake capacity at 25degreesC and at the initial pH of 4.5. Equilibrium data fitted very well to both the Langmuir and Freundlich isotherm models. The pseudo second order kinetic model was applied to describe the kinetic data and the rate constants were evaluated in the studied concentration range of Cu(II) ions at all the temperatures studied. The experimental data fitted well to the pseudo second order kinetic model with a high correlation coefficient (R2 > 0.99), which indicates that the external mass transfer limitations in the system can be neglected and the chemical sorption is the rate-limiting step. The pseudo second order kinetic constants were also used to calculate the activation energy of Cu(II) biosorption.

Keywords: Adsorption Equilibrium, Pseudo Second Order Kinetics, Activation Energy, Heavy-Metal Ions, Aqueous-Solutions, *Rhizopus*-Arrhizus, Batch System, Marine-Algae, Biomass, Sorption, Cadmium, Adsorption, Vulgaris

Sharma, A. and Bhattacharyya, K.G. (2004), Adsorption of chromium(VI) on Azadirachta Indica (Neem) leaf powder. *Adsorption-Journal of the International Adsorption Society*, **10** (4), 327-338.

Full Text: [A\Adsorption10, 327.pdf](A/Adsorption10,%20327.pdf)

Abstract: A novel adsorbent was developed from mature leaves of the Neem tree (Azadirachta Indica) for removing metal ions from water. The adsorbent, in the form of fine powder, was found to be very effective in removing chromium(VI) from aqueous solution. The adsorption was carried out in a batch process taking different concentrations of the metal ion in aqueous solution with variation in adsorbent amount, pH, agitation time and temperature. The suitability of the adsorbent was tested with Langmuir and Freundlich isotherms and with various equilibrium kinetic data. A small amount of the Neem Leaf Powder (NLP) (1.6 g dm-3) could remove as much as 87% of Cr(VI) in 300 min from a solution of concentration 14.1 mg dm-3 at 300 K. The optimum range of pH for the adsorption process was 4.5-7.5 and since the natural pH of the Cr(VI) solution was 5.5, no addition of acid or alkali was necessary for achieving maximum adsorption. The adsorption coefficients indicated a high potentiality for the NLP to be used as an adsorbent for removing Cr(VI) from water.

Keywords: Acid, Activated Carbon, Adsorbent, Adsorption, Adsorption Coefficients, Adsorption Process, Agitation, Agitation Time, Aqueous Solution, Aqueous-Solutions, Batch, Chromium, Chromium(VI), Chromium(VI), Concentration, Concentrations, Cr, DEC, Effective, Equilibrium, Fly-Ash, Freundlich, Freundlich Isotherms, Heavy-Metals, Hexavalent Chromium, Ion, Ions, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir and Freundlich Isotherms, Leaf, Leaves, Metal, Metal Ion, Metal Ions, Metal Removal by Adsorption, Natural, Neem Leaf Powder, pH, Powder, Process, Range, Reduction, Removal, Removing, Temperature, Time, Tree, VI, Water

Yalçin, M., Gürses, A., Doğar, Ç. and Sözbilir, M. (2004), The adsorption kinetics of Cethyltrimethylammonium Bromide (CTAB) onto powdered active carbon. *Adsorption-Journal of the International Adsorption Society*, **10** (4), 339-348.

Full Text: [A\Adsorption10, 339.pdf](A/Adsorption10,%20339.pdf)

Abstract: This study investigates the adsorption kinetics of CTAB (cethyltrimethylammonium bromide), a cationic surfactant, onto PAC from aqueous solution with respect to the initial CTAB concentration at 20degreesC. The pseudo-first-order, second-order kinetic models and intraparticle diffusion model were used to describe the kinetic data and the rate constants were calculated. The rate parameter, k1, of intraparticle diffusion, the rate parameter, k2, of the pseudo-second-order and k1, the rate parameter for the pseudo-first-order mechanism were compared. It was found that the pseudo-second-order adsorption mechanism is predominant and the overall rate of the CTAB adsorption process appears to be controlled by more than one step, namely both the external mass transfer and intraparticle diffusion mechanisms.

Keywords: Adsorption Kinetics, CTAB, Powdered Active Carbon, Pseudo-First Order Kinetics, Pseudo-Second Order Kinetics, Intraparticle Diffusion, Liquid-Phase Adsorption, Aqueous-Solution, Acid Dye, Reactive Dyes, Basic-Dyes, Metal-Ions, Sorption, Chitosan, Peat, Sorbents

? Kornatowski, J. (2005), Expressiveness of adsorption measurements for characterization of zeolitic materials - A review. *Adsorption-Journal of the International Adsorption Society*, **11** (3-4), 275-293.

Full Text: [2005\Adsorption11, 275.pdf](2005/Adsorption11,%20275.pdf)

Abstract: This critical review concerns the author’s results and experience in adsorption studies on molecular sieves comprising crystalline microporous aluminosilicates and aluminophosphates as well as amorphous mesoporous aluminosilicates. The discussion is mainly based on three distinctly different standard adsorbates: nitrogen, benzene, and water. The highlights or advantages and the shortcomings or limitations are considered from the points of view of the experimental procedures and expressiveness or concluding. The results are compared to several other zeolitic materials and adsorbates. Adsorption technique is a valuable tool for characterization of the molecular sieves. Since the measurements are very sensitive to modification of the materials, the investigations require sufficiently thorough procedures and the results a careful interpretation. A comparison between the results for larger series of materials yields valuable conclusions that are much more expressive than those from a single measurement or material.

Keywords: Adsorbent Heterogeneity, Adsorption, Adsorption Centres, Adsorption Equation, Adsorption Mechanism, Adsorption Theory, AFI-Type Crystals, ALPO4-5, Benzene, Characterization, Comparison, Concerns, FTIR-Microscopy, Interference Microscopy, Isotherms, MCM-36, Mesoporous, Modification, Molecular Sieves, N-Hexane, Nitrogen, Pillared Molecular-Sieve, Sorption Capacity, Sorption Properties, Water

Petkovska, M. (2005), Application of Nonlinear frequency response to adsorption systems with complex kinetic mechanisms. *Adsorption-Journal of the International Adsorption Society*, **11**, 497-502.

Full Text: [2005\Adsorption11, 497.pdf](2005/Adsorption11,%20497.pdf)

Abstract: The paper is a contribution to formation of a library of sets of frequency response functions of different orders, for complex kinetic mechanisms typical for adsorption on bidispersed sorbents. The first and second order frequency response functions have been derived starting from a general model, taking into account macro-pore diffusion, micro-pore diffusion, adsorption/desorption kinetics at the micropore mouth and film mass transfer at the particle surface. Simplified models, which neglect one or more mass transfer resistances, were also considered. The frequency response functions were derived for isothermal case, constant diffusion coefficients and planar geometry. The first and second order functions were simulated for the general and for some special cases. Based on these simulation results, some characteristic patterns of the amplitude and phase functions, corresponding to different cases, have been recognized. These patterns can serve as a basis for model and mechanism identification.

Keywords: Nonlinear Frequency Response, Adsorption Kinetics, Complex Mechanisms, Bidispersed Sorbents

Nakamura, T., Kodama, A., Goto, M. and Hirose, T. (2005), Extended short cycle time analysis of pressure swing adsorption with nonlinear adsorption isotherm. *Adsorption-Journal of the International Adsorption Society*, **11**, 609-614.

Full Text: [2005\Adsorption11, 609.pdf](2005/Adsorption11,%20609.pdf)

Abstract: A set of differential equations of material balance for a twin column, two-step PSA (Pressure Swing Adsorption) was expanded into a power series of small value of half cycle time t(c). The effect of finite value of cycle time on the time average product concentration C-A1 started with the second order term and was interpreted by an additional resistance of mass transfer due to the difference in adsorbed amount between adsorption and desorption steps. Finally the column height L or NTU(N-A = K-A amL/u) required to obtain a given concentration of product gas C-A1 was given by the following closed form equation for both linear and nonlinear isotherms

$$\bigg\{{\frac{1}{N_A} + \frac{u_A}{u_D}\frac{1}{N_D} + \frac{1}{\nu _\Delta}} \bigg\}^{- 1} = \int_{C_{A1}}^{_ 1} {\frac{dC_A}{G(C_A) - G(C_D)},}\quad \hbox{with}\quad C_D = \frac{p_D}{p_A}C_{A1} + \frac{u_D}{u_A}(C_A - C_{A1})$$

in which parameters Ka, L, m, p and u are overall volumetric mass transfer coefficient, column length, adsorption coefficient, pressure and superficial gas velocity, respectively. Subscript A and D refer to adsorption and desorption steps. The function G(C) is a dimensionless adsorption isotherm and the term 1/nu(Delta) is the above mentioned additional mass transfer resistance proportional to square of t(c). The performance prediction by the equation agreed well with more rigorous numerical solutions over a wide range of cycle time by introducing the additional resistance 1/nu(Delta). The concentration swing Delta C-A1, i.e. concentration difference during a half cycle time, was also discussed in a frame of the same concept.

Keywords: Adsorption, Pressure Swing Adsorption, Short Cycle Time Approximation, Analytical Solution, Approximation, Air

? Rio, S., Faur-Brasquet, C., Le Coq, L. and Le Cloirec, P. (2005), Production and characterization of adsorbent materials from an industrial waste. *Adsorption-Journal of the International Adsorption Society*, **11**, 793-798.

Full Text: [2005\Adsorption11, 793.pdf](2005/Adsorption11,%20793.pdf)

Abstract: Preparation of activated carbon is carried out from an abundant and very cheap waste by-product from wastewater treatment plant: sewage sludge. The first step of preparation consists in a carbonization process under a 10 mL min-1 nitrogen flow, at 600°C during 1 hour. The second step is a physical activation, performed with carbon dioxide. The experimental conditions of the activation were optimized using experimental design methodology. Three factors were studied: activation temperature (from 700 to 900°C), activation duration (from 30 to 120 min) and CO2 flow rate (from 0.7 to 2.9 L min-1). The porous carbonaceous materials were characterized in terms of physico-chemical and structural properties (specific surface area, pore volumes, surface pH, surface functional groups) and adsorption properties in aqueous and gaseous phase, these characteristics constituting the responses of the experimental design. A surface response methodology enabled to define optimum values for the 3 factors (at 900°C during 30 min for a CO2 flow rate of 2.9 L min-1) which involve an adsorbent with a specific surface area of 260 m2 g-1 and a pore size distribution comprising meso and micropores. Adsorption capacities of organic pollutants (phenol, dyes, VOC) are proportional to the specific surface area, apart from copper adsorption capacities (up to 80 mg g-1) due to an ion-exchange mechanism with Ca2+ ions present in the raw material. In order to decrease the high ash content in the produced material (51 wt.%) and thus to improve the pore development, carbonized sludge were washed with an acid (HCl, 3 M) at room temperature before the activation step. This oxidation pre-treatment allowed to reach a 4 10 m2 g-1 specific surface area with an ash content of 26.4 wt.%.

Keywords: Activated Carbon Production, Carbonization, Physical Activation, Experimental Design, Adsorption, Activated Carbons, Sewage-Sludge, Bituminous Coal, Adsorption

? Deng, S.G. (2005), Polymeric adsorbent for radium removal from groundwater. *Adsorption-Journal of the International Adsorption Society*, **11**, 805-809.

Full Text: Adsorption11, 805.pdf

Abstract: Radium removal from groundwater by adsorption on polymeric adsorbent represents the latest application of adsorption process in water treatment. A three-month pilot study was carried out in the customer site to collect process performance data on Dowex RSC (radium selective complexer) for a large scale plant design. It was observed from the pilot test that the RSC resin has exceptionally high adsorption capacity for radium, no radium breakthrough from 38” RSC bed during the entire pilot test; however the adsorbent mass transfer zone extended with the progress of pilot test. The increasing mass transfer zone was probably caused by the changing adsorbent properties. This interesting phenomenon presents a very tough challenge to both adsorption process design and simulation. Another very unique aspect of this process is that the adsorbent with the exceptionally high adsorption capacity may not be suitable for this process due to radiation safety concern and waste disposal limit.

Keywords: Adsorbent, Barium, Complexation, Ion-Exchange, MTZ, Polymeric, Radium, Uranium, Water Treatment

Cheung, C.W., Choy, K.K.H., Porter, J.F. and McKay, G. (2005), Empirical multicomponent equilibrium and film-pore model for the sorption of copper, cadmium and zinc onto bone char. *Adsorption-Journal of the International Adsorption Society*, **11** (1), 15-29.

Full Text: [2005\Adsorption11, 15.pdf](2005/Adsorption11,%2015.pdf)

Abstract: The adsorption of three metal ions onto bone char has been studied in both equilibrium and kinetic systems. An empirical Langmuir-type equation has been proposed to correlate the experimental equilibrium data for multicomponent systems. The sorption equilibrium of three metal ions, namely, cadmium(II) ion, zinc(II) ion and copper(II) ion in the three binary and one ternary systems is well correlated by the Langmuir-type equation. For the batch kinetic studies, a multicomponent film-pore diffusion model was developed by incorporating this empirical Langmuir-type equation into a single component film-pore diffusion model and was used to correlate the multicomponent batch kinetic data. The multicomponent film-pore diffusion model shows some deviation from the experimental data for the sorption of cadmium ions in Cd-Cu, Cd-Zn and Cd-Cu-Zn systems. However, overall this model gives a good correlation of the experimental data for three binary and one ternary systems.

Keywords: Film, Pore Diffusion, Batch Sorption, Metal Ions, Bone Char, Multicomponent

Uğurlu, M., Gurses, A., Yalçın, M. and Dogar, C. (2005), Removal of phenolic and lignin compounds from bleached kraft mill effluent by fly ash and sepiolite. *Adsorption-Journal of the International Adsorption Society*, **11** (1), 87-97.

Full Text: [2005\Adsorption11, 87.pdf](2005/Adsorption11,%2087.pdf)

Abstract: This study aimed to remove phenolic and lignin compounds from paper mill industry (4500 m3/h) wastewaters, which is discharged to sea from a plant located in the western Turkey. As adsorbent, fly ash, raw sepiolite and heat-activated sepiolite were used. The effect of factors such as, particle size, temperature and pH on adsorption process was investigated. From kinetic studies, equilibrium time was found as 1 h for both. The kinetic data supports pseudo-second order model but shows very poor fit for pseudo-first order model. Intraparticle model also shows that there are two separate stages in sorption process, namely, external diffusion and pore diffusion. Adsorption isotherms for fly ash and activated sepiolite were obtained at two different temperatures. From experiments carried out at different pHs, it was observed that pH plays an important role in the adsorption process in removing of both lignin and phenolic compounds, providing both ionizating the compounds and modifying sorbent surfaces. It was also observed that heat-activated sepiolite is more effective than raw sepiolite and fly ash to remove these compounds. Adsorption of lignin and phenolic compounds increases with decreasing particle size. In addition, the efficiency of adsorption decreases with increasing adsorption temperature for both fly ash and untreated sepiolite.

Keywords: Acid Dye, Adsorbent, Adsorption, Adsorption, Adsorption Isotherms, Aqueous-Solution, Basic-Dyes, Bentonite, Bleached Kraft Mills Effluent, Color, Diffusion, Efficiency, Equilibrium, Experiments, Fly Ash, Ions, Isotherms, Kinetic, Kinetic Studies, Kinetics, Lignin, Model, Particle Size, Peat, pH, Phenolic and Lignin Compounds, Plant, Pore Diffusion, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second Order Model, Pseudo-Second-Order, Removal, Sepiolite, Size, Sorbent, Sorption, Sorption Process, Temperature, Turkey

Walton, K.S., Cavalcante, Jr., C.L. and Levan, M.D. (2005), Adsorption equilibrium of alkanes on a high surface area activated carbon prepared from Brazilian coconut shells. *Adsorption-Journal of the International Adsorption Society*, **11** (2), 107-111.

Full Text: [2005\Adsorption11, 107.pdf](2005/Adsorption11,%20107.pdf)

Abstract: Adsorption equilibria of methane, ethane, and *n*-butane on a high surface area activated carbon prepared from Brazilian coconut shells is examined in this study. The material shows high capacities for the alkanes tested. A group-contribution theory is used to predict adsorption isotherms for all three components with very good accuracy employing one set of model parameters. The theory is also used to observe trends in isosteric heat of adsorption as a function of loading at various temperatures.

Keywords: Adsorption Equilibrium, Alkanes, Nanoporous, Group-Contribution Theory, Carbon, Coconut Shells

Mendes, M.F. and Coelho, G.L.V. (2005), Desorption processes: Supercritical fluid regeneration of modified clays. *Adsorption-Journal of the International Adsorption Society*, **11** (2), 139-146.

Full Text: [2005\Adsorption11, 139.pdf](2005/Adsorption11,%20139.pdf)

Abstract: The main objective of this work is the study of the regeneration capacity of modified clays using carbon dioxide. These modified clays are used as organic compounds adsorbents. Modified clays were used to remove ethyl acetate from aqueous solutions. Structural changes on the montmorillonite clay after a treatment with quaternary amines were investigated. The experimental step was also done using a packed column with the clay contaminated by ethyl acetate and toluene. Different pressures and temperatures were employed, leading to different fluid conditions (gas, liquid and supercritical). The results obtained showed the influence of the density of the supercritical CO2 and of the organic modifier in the desorption process. These data were modeled with a simple model and with models of first and second orders. The better results were reached using the second-order model. This study allows the scale-up of the desorption process for the regeneration of solid matrices using supercritical fluids. The modified clay capacity as a pollutant attenuator remained almost unchanged after a regeneration cycle.

Keywords: Activated Carbon, Ethyl-Acetate, Adsorption, Extraction, Dioxide, Equilibrium, Toluene, Soil

Leitão, A. and Serrão, R. (2005), Adsorption of phenolic compounds from water on activated carbon: Prediction of multicomponent equilibrium isotherms using single-component data. *Adsorption-Journal of the International Adsorption Society*, **11** (2), 167-179.

Full Text: [2005\Adsorption11, 167.pdf](2005/Adsorption11,%20167.pdf)

Abstract: Batch-type experiments were carried out to obtain equilibrium isotherms for the adsorption of phenol and *m*-cresol in aqueous solutions on activated carbon. Single solute systems, at 20 and 40°C, were tested for Langmuir, Freundlich and Sips adsorption isotherms in the range of concentrations up to 200 mg/L. Equilibrium data were more closely followed by the Freundlich and Sips equations for all cases. Adsorption isotherms for bisolute systems at 20°C, with two different initial concentrations of phenol and *m*-cresol, were predicted solely on the basis of single solute equilibrium parameters by using the equations of Butler and Ockrent and the IAS theory. The best agreement with the experimental loading values was afforded with the IAS theory based on Sips isotherm for pure compounds. However, this theory is found to be not able to predict with success the binary isotherms in this work where significant displacement of one solute by the other is observed. Chemical interactions in the adsorbed phase, estimated by a modified Butler–Ockrent model, can be responsible for this lack of success of the conventional IAS theory. The predictions based on the IAS theory are compared with the results of some empirical models.

Keywords: Binary Adsorption, Phenol and *m*-cresol, Prediction of Mixture Isotherms, IAS Theory

Faur, C., Métivier-Pignon, H. and Le Cloirec, P. (2005), Multicomponent adsorption of pesticides onto activated carbon fibers. *Adsorption-Journal of the International Adsorption Society*, **11** (5-6), 79-90.

Full Text: [2005\Adsorption11, 79.pdf](2005/Adsorption11,%2079.pdf)

Abstract: The adsorption equilibria of pesticides and metabolites (atrazine, deethylatrazine, deisopropylatrazine and simazine) are studied onto activated carbon fibers –ACF– with a broad pore size distribution (32% mesopore volume, 68% micropore volume). Mono-and multi-component isotherms have been determined for low concentrations, from 0.23×10−6 to 9.52×10−6 mol L−1. Single solute isotherms, modeled by Freundlich and Langmuir models, tend to prove the influence of the adsorbate’s solubility in the adsorption capacity of activated carbon fibers. Binary solute isotherms confirm the strong influence of pesticide solubility on the competitive adsorption mechanism: the competition is higher in the case of adsorbates of different solubilities (atrazine and DEA or DIA for example). Multicomponent experimental data were modeled by extended Langmuir-based equations and the Ideal Adsorbed Solution theory. Whereas the first ones failed to model accurately binary adsorption due to restrictive hypothesis, the IAS model showed a good agreement between experimental and predicted data. It emphasised also the difficulty in satisfying the hypothesis of the model in the case of highly adsorbed compounds. Finally, the simultaneous adsorption of atrazine and NOM (in a natural water, DOC = 18.2 mg L−1) shows no adsorption competition effects between natural organic matter and atrazine. This is due to the presence of secondary micropores (0.8–2 nm) and mesopores in the ACF, which limit a pore blockage phenomenon by NOM.

Keywords: Liquid Multicomponent Adsorption, Activated Carbon Fibers, Pesticides, Natural Organic Matter, Extended Langmuir Equation, IAS Modeli

? Dabrowski, A., Barczak, M., Stolyarchuk, N.V., Melnyk, I.V. and Zub, Y.L. (2005), Bridged polysilsesquioxane xerogels functionalizated by amine- and thiol- groups: Synthesis, structure, adsorption properties. *Adsorption-Journal of the International Adsorption Society*, **11** (5-6), 501-517.

Full Text: [2005\Ads J Int Ads Soc11, 501.pdf](2005/Ads%20J%20Int%20Ads%20Soc11,%20501.pdf)

Abstract: Bridged polysilsesquioxane xerogels containing amine (-NH2; -NH(CH2)2NH2; =NH) and thiol (-SH) groups were synthesized by hydrolytic polycondensation of 1,2-bis(triethoxysilyl)ethane, 1,4bis(triethoxysilyl)benzene and appropriate trifunctionalized silanes in the presence of a fluoride-ion catalyst in an ethanol solution. Si-29 CP, MAS NMR give indication of the molecular framework of these materials formed by structural T-1, T-2 and T-3 units. 3-aminopropyl or 3-mercaptopropyl groups accessible to proton or metal ions are fixed to the xerogel surface by the siloxane bonds. IR and C-13 CP, MAS NMR data clearly show that 3-aminopropyl groups form hydrogen bonds. The same data testify that all xerogels contain non-condensed silanol groups and some fraction of non-hydrolyzed ethoxygroups. Functionalized polysilsesquioxane xerogels obtained by means of organic spacers have a porous structure (500-1000m2, g) and a high content of functional groups (1.0-2.7 mmoVg). AFM data indicate that xerogels are formed by aggregating primary particles-the size of such aggregates is in the range 30-65 nm. It was established that the main factors influencing the structure and adsorption properties considered hybrid materials are: the nature and geometrical size of the functional groups, spacer flexibility and, in some cases, the ratio of the reacting alkoxysilanes and the ageing time of the gel.

Keywords: Functionalized Bridged, Hybrid Materials, Polysilsesquioxane Xerogels, Porosity, Sol-Gel Method

? Khraisheh, M.A.M. and Al-Ghouti, M.S. (2005), Enhanced dye adsorption by microemulsion-modified calcined diatomite (μ E-CD). *Adsorption-Journal of the International Adsorption Society*, **11** (5-6), 547-559.

Full Text: [2005\Adsorption11, 547.pdf](2005/Adsorption11,%20547.pdf)

Abstract: This study attempted to improve the adsorption performance of calcined diatomite for the removal of colour from wastewaters through modification with microemulsions. The surface area, pH(ZPC), Fourier transform infrared (FTIR) of calcined diatomite and μ E-CD were studied. It is found that an increase in the BET surface area, pH(ZPC) and total pore volume after modification was obtained. A decrease in average pore volume was observed after modification. This suggests that the pore opening deceased to be in the micro- and meso-pore region hence the adsorption capacity for the modified adsorbent will be enhanced by reducing the escaping of dye molecules. The influence of concentration, pH and particle size on the adsorption capacities of methylene blue (MB), hydrolysed reactive black (RB) and hydrolysed reactive yellow (RY) was investigated. It was concluded from FTIR and pH analysis that the predominant mechanism of RY molecules onto μ E-CD is by an electrostatic attraction between the carboxylate anion and the dye. In the case of MB and RB, the adsorption mechanism could be a combination of different mechanisms such as electrostatic attraction, capturing by microemulsion micelles in the pores of the calcined diatomite or the hydrophobic attraction. The adsorption capacities were higher than unmodified calcined diatomite. In the case of adsorption of MB molecules, a high adsorption capacity onto μ E-CD was obtained.

Keywords: Activated Carbon, Adsorption, Analysis, Calcined Diatomite, Capacity, Carboxylate, Colour, Concentration, Diatomite, Dye, FTIR, Kinetics, Mechanism, Mechanisms, Methylene Blue, Methylene Blue And Reactive Dye, Microemulsion, Modified Adsorbents, Particle, Particle Size, Performance, pH, Removal, Sorption, Surface Area, Surfactants, Water

Hossain, M.A., Kumita, M., Michigami, Y. and Mori, S. (2005), Optimization of parameters for Cr(VI) adsorption on used black tea leaves. *Adsorption-Journal of the International Adsorption Society*, **11** (5-6), 561-568.

Full Text: [2005\Adsorption11, 561.pdf](2005/Adsorption11,%20561.pdf)

Abstract: Dynamic characteristics of Cr(VI) sorption on used black tea leaves (UBTLs) as a low-cost adsorbent are studied. Batch experiments were conducted to evaluate the effects of Cr(VI) concentration, solution pH and temperature on the removal process. Both of adsorption and reduction, involved in the process, are affected by the processing parameters. The adsorption kinetics is described successfully using pseudo-second order rate equation and the rate constant decreases with increasing the initial concentration of Cr(VI) up to 150 mg/L (for 0.1 g/L UBTLs) then becomes slow. Experimental and calculated kinetic data for equilibrium are well expressed by Langmuir isotherm. The solution pH has a profound effect on the adsorption rate. The rate constant increases linearly with an increase in temperature, and the low value of activation energy of adsorption, 16.3 kJ/mol, indicates that Cr(VI) is easily adsorbed on UBTLs. The maximum Cr(VI) adsorptive conditions, with a minimum reduction, were achieved from the dynamics of operational parameters: the initial Cr(VI) concentration < 150 mg/L (for 0.1 g/L UBTLs); the initial solution pH = 1.54–2.00 and the processing temperature < 50°C, for the possibility of its practical application.

Keywords: Chromium(VI), Used Black Tea Leaves, Adsorption and Reduction, Sorption Dynamics

Lyubchik, S.B., Perepichka, I.I., Galushko, O.L., Lyubchik, A.I., Lygina, E.S. and Fonseca, I.M. (2005), Optimization of the conditions for the Cr(III) adsorption on activated carbon. *Adsorption-Journal of the International Adsorption Society*, **11** (5-6), 581-593.

Full Text: [2005\Adsorption11, 581.pdf](2005/Adsorption11,%20581.pdf)

Abstract: In order to understand the patterns of the adsorption equilibrium of Cr(III) on activated carbon, the adsorption process was studied by two different ways: classical batch experiments on commercial Norit and Merck activated carbons and their oxidized forms in a wide range of pHs; and extended time-based tests at the same pH values on the same adsorbents. This approach allowed us to understand the role of texture, chemical carbon surface functionality and experimental conditions (initial pH of the solution, contact time and adsorbate/adsorbent ratio) on the effectiveness of Cr(III) removal. The adsorption process of Cr(III) at (24 ± 1°C) on Merck and Norit activated carbons and their oxidized forms were studied at pH values between 1.5 and 5 (either adjusted or buffered). Chromium concentration was fixed at 200 ppm. The carbon loading ranged from 1.2 to 20 g/l. The carbon/Cr(III) solution contact time was varied from 0.5–1 month to 5 months, to ensure that the saturation of the carbon level was reached. According to the data obtained, the presence of carboxylic groups on carbon surface seems to enhance Cr(III) uptake at initial pH of the solution in the range between 2 and 4. Depending on the nature of the adsorbent surface chemistry, the contact time to reach equilibrium may range from 3 to 5 months. There is an optimum carbon loading which limits the Cr(III) uptake/removal at given pH value. In order to understand the adsorption process, an ion exchange, surface complex and surface precipitation were considered.

Keywords: Heavy Metals, Adsorption, Activated Carbon, Surface Chemistry

? Chandrasekhar, S. and Pramada, P.N. (2006), Rice husk ash as an adsorbent for methylene blue-effect of ashing temperature. *Adsorption-Journal of the International Adsorption Society*, **12** (1), 27-43.

Full Text: [2006\Adsorption12, 27.pdf](2006/Adsorption12,%2027.pdf)

Abstract: Utilization of one waste material to control pollution caused by another is of high significance in the remediation of environmental problems. Rice husk, an abundantly available agricultural waste, can be used as a low cost adsorbent for dyes and heavy metals in effluent streams. The possible utilization of rice husk ash as an adsorbent for methylene blue dye from aqueous solutions has been investigated. Ash samples from husks of two origins were prepared at different temperatures and their physical, chemical spectroscopic and morphological properties were determined. XRD, FTIR and SEM were some of the techniques adopted for the characterization. The samples were also analyzed for bulk density, pH, nitrogen adsorption properties and lime reactivity. Experiments of methylene blue adsorption on the ash samples were conducted using batch technique and a comparative study was made. Results were analyzed using linear, Langmuir and Freundlich isotherms. The values of separation factor indicate that most of the ash samples do adsorb the dye molecules, but in varying quantities. Calcination at 900°C reduces the adsorption capacity of the ash to a great extent. Regression analysis shows that the experimental data fits both Langmuir and Freundlich isotherms for certain concentration limits. The adsorbate species are most probably transported from the bulk of the solution into the solid phase through intra-particle diffusion process. Kinetics of adsorption was found to follow pseudo second order rate equation with R-2 similar to 0.99. The highest adsorption capacity (Q(0)) achieved is found to be similar to 690 mg/g, which is even higher than the values reported for activated carbon from rice husk. The adsorption capacity of the ash samples are in good agreement with their surface area and pore volume.

Keywords: Rice Husk Ash, Silica, Adsorption, Calcination, Methylene Blue, Acid Dye, Activated Carbons, Reactive Dyes, Leaf Powder, Waste-Water, Congo Red, Adsorption, Removal, Kinetics, Silica

? Gasser, M.S., Morad, G.A. and Aly, H.F. (2006), Equilibrium and kinetics study of Gd(III) and U(VI) adsorption from aqueous solutions by modified Sorrel’s cement. *Adsorption-Journal of the International Adsorption Society*, **12** (1), 65-76.

Full Text: [2006\Adsorption12, 65.pdf](2006/Adsorption12,%2065.pdf)

Abstract: Modified Sorrel’s cement was prepared by the addition of ferric chloride. The modified cement (MF5) was analyzed and characterized by different methods. Adsorption of Gd(III) and U(VI) ions in carbonate solution has been studied separately as a function of pH, contact time, adsorbent weight, carbonate concentration, concentration of Gd(III) and U(VI) and temperature. From equilibrium data obtained, the values of Delta H, Delta S and Delta G were found to equal -30.9 kJ.mol-1, -85.4 J.mol-1., K-1, and -5.4 KJ . mol-1, respectively, for Gd(III) and 18.9 kJ . mol-1, 67.8 J . mol-1 K-1 and -1.3 KJ . mol-1, respectively, for U(VI). The equilibrium data obtained have been found to fit both Langmuir and Freundlich adsorption isotherms. The batch kinetic of Gd(III) and U(VI) on modified Sorrel’s cement (MF5) with the thermodynamic parameters from carbonate solution were studied to explain the mechanistic aspects of the adsorption process. Several kinetic models were used to test the experimental rate data and to examine the controlling mechanism of the adsorption process. Various parameters such as effective diffusion coefficient and activation energy of activation were evaluated. The adsorption of Gd(III) and U(VI) on the MF5 adsorbent follows first-order reversible kinetics. The forward and backward constants for adsorption, k (1)and k (2) have been calculated at different temperatures between 10 and 60°C. Form kinetic study, the values ΔH° and ΔS° were calculated for Gd(III) and U(VI) at 25°C. It is found that Delta H\* equals -14.8 kJmol-1 and 7.2 kJmol-1 for Gd(III) and U(VI), respectively, while Delta S\* were found equal -95.7 Jmol-1K-1 and -70.5 Jmol-1K-1 for Gd(III) and U(VI), respectively. The study showed that the pore diffusion is the rate limiting for Gd(III) and (VI).

Keywords: Activated Carbon, Activation, Activation Energy, Adsorbent, Adsorption, Adsorption Isotherms, Aqueous Solutions, Carbonate, Cement, Chloride, Diffusion, Diffusion Coefficient, Equilibrium, Experimental, Freundlich, Function, Gd(III), Gd(III) and U(VI), Ion-Exchange, Isotherms, Kinetic, Kinetic Models, Kinetic Study, Kinetics, Langmuir, Magnesium, Mechanism, Methods, Models, Modified Cement, Oxychlorides, pH, Pore Diffusion, Solution, Sorption, Temperature, Thermodynamic, Thermodynamic Parameters, U(VI), Waste, Water

? Üzüm, O.B. and Karadağ, E. (2006), Uptake of Basic Blue 17 from aqueous solutions by using chemically crosslinked polyelectrolyte AAm AASS hydrogels. *Adsorption-Journal of the International Adsorption Society*, **12** (1), 77-88.

Full Text: [2006\Adsorption12, 77.pdf](2006/Adsorption12,%2077.pdf)

Abstract: In this study, the removal of a cationic thiazin dye such as Basic Blue 17 (Toluidin Blue, BB 17) by chemically crosslinked acrylamide (AAm)/acrylic acid sodium salt (AASS) hydrogels was investigated. Super water retainer AAm/AASS hydrogels with various compositions were prepared from ternary mixtures of AAm, AASS and water by free radical polymerization in aqueous solution using multifunctional crosslinkers such as ethylene glycol dimethacrylate (EGDMA), N,N’ methylenebisacrylamide (NMBA), 1,4 butanediol dimethacrylate (BDMA) and trimethylolpropane triacrylate (TMPTA). Adsorption of Basic Blue 17 from aqueous solutions was studied by batch sorption technique at 25°C. The effect of Basic Blue 17 concentration and mass of adsorbent on the dye adsorption were examined.

In the experiments of the sorption, C type and L type sorption in the Giles classification system was found. Some binding parameters such as initial binding constant (K (i)), equilibrium constant (K), monolayer coverage (n), site-size (u), and maximum fractional occupancy ((O) over cap) for AAm/AASS hydrogel-dye binding system were calculated by using Klotz linearization method. Finally, the amount of sorbed Basic Blue 17 per gram of dry hydrogel (q) was calculated to be 1.96-21.35 μmol dye per gram for AAm/AASS hydrogels. Adsorption of Basic Blue 17 was changed range 39.17-96.63%. AAm/AASS hydrogels crosslinked by TMPTA, EGDMA, BDMA or NMBA can be used a sorbent in biotechnology, environment, sorption, separation, purification, immobilization and enrichment of some species.

Keywords: Maleic-Acid Hydrogels, Adsorption-Isotherm, Radiation Synthesis, Copolymer Hydrogel, General Treatment, Heavy-Metals, Acrylamide, Dyes, Removal, Classification

? Namasivayam, C. and Sangeetha, D. (2006), Removal and recovery of vanadium(V) by adsorption onto ZnCl2 activated carbon: Kinetics and isotherms. *Adsorption-Journal of the International Adsorption Society*, **12** (2), 103-117.

Full Text: [2006\Adsorption12, 103.pdf](2006/Adsorption12,%20103.pdf)

Abstract: Adsorption of vanadium(V) from aqueous solution onto ZnCl2 activated carbon developed from coconut coir pith was investigated to assess the possible use of this adsorbent. The influence of various parameters such as agitation time, vanadium concentration, adsorbent dose, pH and temperature has been studied. First, second order, Elovich and Bangham’s models were used to study the adsorption kinetics. The adsorption system follows second order and Bangham’s kinetic models. Langmuir, Freundlich, Dubinin-Radushkevich and Temkin isotherms have been employed to analyze the adsorption equilibrium data. Equilibrium adsorption data followed all the four isotherms-Langmuir, Freundlich, D-R and Temkin. The Langmuir adsorption capacity (Q(0)) was found to be 24.9 mg g-1 of the adsorbent. The per cent adsorption was maximum in the pH range 4.0-9.0. The pH effect and desorption studies showed that ion exchange mechanism might be involved in the adsorption process. Thermodynamic parameters such as Delta G(0), Delta H-0 and Delta S-0 for the adsorption were evaluated. Effect of competitive anions in the aqueous solution such as PO43-, SO42-, ClO4-, MoO42-, SeO32-, NO3- and Cl- was examined. SEM and FTIR were used to study the surface of vanadium(V) loaded ZnCl2 activated carbon. Removal of vanadium(V) from synthetic ground water was also tested. Results show that ZnCl2 activated coir pith carbon is effective for the removal of vanadium(V) from water.

Keywords: Activated Carbon, Adsorbent, Adsorbent Dose, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Adsorption Kinetics, Aqueous Solution, Aqueous-Solutions, Capacity, Carbon, Chitosan, Coir Pith, Coir Pith Carbon, Desorption, Desorption Studies, Dyes, Equilibrium, Foreign Ions, Freundlich, FTIR, Ion Exchange, Ion-Exchange, Isotherms, Kinetic, Kinetic Models, Kinetics, Langmuir, Mechanism, Models, pH, pH Effect, Phosphate, Recovery, Removal, SEM, Solution, Sorption, Temperature, Thermodynamic, Thermodynamic Parameters, Vanadium(V), Wastewaters, Water

? Mohanty, K., Das, D. and Biswas, M.N. (2006), Preparation and characterization of activated carbons from *Sterculia alata* nutshell by chemical activation with zinc chloride to remove phenol from wastewater. *Adsorption-Journal of the International Adsorption Society*, **12** (2), 119-132.

Full Text: [2006\Adsorption12, 119.pdf](2006/Adsorption12,%20119.pdf)

Abstract: Nutshells of Sterculia alata, a forest waste, were used to prepare activated carbons by zinc chloride activation under four different activation atmospheres, to develop carbons with substantial capability, and to adsorb phenol from wastewater. Experiments were carried out at different chemical ratios (activating agent/precursor). Effect of carbonization temperature and time are the important variables, which had significant effect on the pore structure of carbon. Developed activated carbon was characterized by SEM analysis. Pore volume and surface area were estimated by Hg porosimetry and BET surface area analyses. The carbons showed surface area and micropore volumes of around 712 m2/g and 0.542 cm3/g, respectively. The activated carbon developed shows substantial capability to adsorb phenol from wastewater. The kinetic data were fitted to the models of intraparticle diffusion, pseudo-second order, and Lagergren model and followed more closely the pseudo-second-order chemisorption model. The isotherm equilibrium data were well-fitted by the Langmuir and Freundlich models. The maximum uptake of phenol was found at pH 3.5.

Keywords: Activated Carbon, Activated Carbons, Activation, Adsorption, Analysis, Bagasse, BET, Carbon, Carbonization, Characterization, Chemical Activation, Chloride, Diffusion, Dilute Aqueous-Solutions, Equilibrium, Freundlich, Intraparticle Diffusion, Ions, Isotherm, Kinetic, Lagergren Model, Langmuir, Model, Models, pH, Phenol, Phenol Removal, Pseudo-Second Order, Pseudo-Second-Order, SEM, Sterculia Alata Nutshell, Stones, Structure, Surface Area, Temperature, Wastewater, Wastewater Treatment, Zinc, Zinc Chloride

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Full Text: [2006\Adsorption12, 133.pdf](2006/Adsorption12,%20133.pdf)

Abstract: The adsorption capacities of commercial and Brazilian natural clays were evaluated to test their applications in wastewater control. We investigated the process of sorption of manganese(II) and cadmium(II) present in synthetic aqueous effluents, by calculating the adsorption isotherms at 298 K using batch experiments. The influence of temperature and pH on the adsorption process was also studied. Adsorption of metals was best described by a Langmuir isotherm, with values of Q(0) parameter, which is related to the sorption capacity, corresponding to 6.3 mg g-1 for K-10/Cd(II), 4.8 mg g-1 for K-10/Mn(II), 11.2 mg g-1 for NT-25/Cd(II) and 6.0 mg g-1 for NT-25/Mn(II). We observed two distinct adsorption mechanisms that may influence adsorption. At the first 5 min of interaction, a cation exchange mechanism that takes place at exchange sites located on (001) basal planes is predominant. This process is inhibited by low pH values. After this first and fast step, a second sorption mechanism can be related to formation of inner-sphere surface complexes, which is formed at edges of the clay. The rate constants and the initial sorption rates correlate positively with temperature in all studied systems, denoting the predominance of a physisorption process. The addition of complexing agents that are incorporated within the K10 structure, enhance metal uptake by the adsorbent. The results have shown that both Cd(II) and Mn(II) were totally retained from a 50 mg L-1 solution when K10 grafted with ammonium pyrrolidinedithiocarbamate (APDC) was used as adsorbent.

Keywords: Modified Clays, Brazilian Clay, Toxic Metals, Adsorption Isotherm, Wastewater, Heavy Metals, Heavy-Metal Removal, Ion-Exchange, Waste-Water, Sorption, Montmorillonite, Kinetics, Copper, Adsorption, Extraction, Minerals

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Full Text: [2006\Adsorption12, 147.pdf](2006/Adsorption12,%20147.pdf)

Abstract: Granular Activated Carbon (GAC), a commercial adsorbent for the removal of heavy metals was treated chemically with potassium bromate for it’s surface modification and it’s adsorption capacity was investigated with nickel ions. There was an increase in the adsorption capacity of the modified carbon by 90-95% in comparison to the raw granular activated carbon towards nickel ion adsorption. Potassium Bromate oxidation treatment was employed for a period of about 30 mins initially followed by 60 mins and the oxidized carbons were adsorbed with nickel ions. Metal sorption characteristics of as received and modified activated carbons were measured in batch experiments. Batch adsorption was successfully modeled by Langmuir Isotherm Model which indicates monolayer adsorption. The adsorption isotherms also fit well to the Freundlich Model. Effects of pH of initial solution, time of oxidation and mode of treatment on the adsorption process were studied. Experimental results showed that metal uptake increased with an increase in pH and oxidation time. The samples were characterized by Scanning Electron Microscope (SEM) studies and surface area analyzer.

Keywords: Granular Activated Carbon (GAC), Nickel, Potassium Bromate, Surface Treatment, Isotherm, Kinetics, Batch Experiments, Subsequent Treatment, Aqueous-Solutions, Nitric-Acid, Sorption, Ions, Oxidation, Wastes, Fibers, Copper

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Full Text: [2006\Adsorption12, 175.pdf](2006/Adsorption12,%20175.pdf)

Abstract: Extensive research has been conducted for removal and recovery of heavy metals from wastewater and industrial wastewater in recent years. Due to its low cost and high sorption efficiency, alginate was extensively investigated as a biosorbent. It is known that the sorption of metals to alginate is rate limited. However, the sampling in the beginning of experiments, from 30 seconds to few minutes, is very difficult, if not impossible. In this study, a nontraditional experimental method was used to determine the removal kinetics of metals for short time periods. A relationship among pH, conductivity, and metal concentration was established. It was shown that the sorption mechanism was ion exchange for all metals investigated in this study. A series of experiments was conducted to determine the ion exchange kinetics of different metals at varying pH conditions. Second order pseudo rate kinetics was shown to define the experimental findings well. Results also showed that the extent of exchange significantly reduced as the pH decreased. The selectivity of metal exchange to alginate beads was determined. It was observed that the extent of the ion exchange was greatest for CCu2+ and lowest for Mn2+ and Fe2+, following the order of Cu2+ > Zn2+ congruent to Co2+ congruent to Ni2+ > Mn2+ congruent to Fe2+.

Keywords: Second Order Pseudo Rate, Ion Exchange, Kinetics, Alginate, Metal Sorption, Biosorption, Divalent Metals, Ion-Exchange, Biosorption, Water, Waste, Precipitation, Equilibrium, Removal, Electrodialysis, Selectivity

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Full Text: [2006\Adsorption12, 185.pdf](2006/Adsorption12,%20185.pdf)

Abstract: The present work investigates the removal of Fe(III) ions from an aqueous solution by kaolinite, montmorillonite and their acid activated forms. The specific surface areas of kaolinite, acid activated kaolinite, montmorillonite and acid activated montmorillonite were 3.8, 15.6, 19.8 and 52.3 m2/g respectively whereas the cation exchange capacity (CEC) was measured as 11.3, 12.2, 153.0, and 341.0 meq/100 g for four clay adsorbents respectively. Adsorption increased with pH till Fe(III) became insoluble at pH > 4.0. The kinetics of the interactions is not certain, but the second order kinetics (k(2) = 4.7×10-2 to 7.4×10-2 g mg-1 min-1) appears to give a better description. Langmuir and Freundlich isotherms were applied and isotherm coefficients were computed. The Langmuir monolayer capacity of the clay adsorbents was from 11.2 to 30.0 mg g-1. The process was exothermic with Delta H in the range of - 27.6 to - 42.2 kJ mol-1 accompanied by decrease in entropy (Delta S =- 86.6 to- 131.8 J mol-1 K-1) and decrease in Gibbs energy. The results have shown that kaolinite, montmorillonite and their acid activated forms could be used as adsorbents for separation of Fe(III) from aqueous solution. Acid activation enhanced the adsorption capacity compared to the untreated clay minerals.

Keywords: Acid Activated Clay, Activated Clays, Activation, Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Aqueous Solution, Aqueous-Solution, Bentonite, Capacity, Cation, Cation Exchange, Clay, Clay Minerals, Clays, Copper, Entropy, Equilibrium, Equilibrium Isotherm, Fe(III), Freundlich, Heavy-Metals, Isotherm, Isotherms, Kaolinite, Kinetics, Langmuir, Modified Montmorillonite, Monolayer, Montmorillonite, Nickel Ions, pH, Removal, Separation, Solution, Sorption, Specific Surface, Surface Areas, Temperature, Thermodynamics, Waste-Waters, Water, Work

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Full Text: [2006\Adsorption12, 249.pdf](2006/Adsorption12,%20249.pdf)

Abstract: A basic investigation on the removal of Cr(III) and Cr(VI) ions from aqueous solution by chitosan beads was conducted in a batch adsorption system. The chitosan beads were prepared by casting an acidic chitosan solution into an alkaline solution. The influence of different experimental parameters; pH, agitation period and different concentration of Cr(III) and Cr(VI) ions was evaluated. A pH 5.0 was found to be an optimum pH for Cr(III) adsorption, and meanwhile pH 3.0 was the optimum pH for the adsorption of Cr(VI) onto chitosan beads. The Langmuir and Freundlich adsorption isotherm models were applied to describe the isotherms and isotherm constants for the adsorption of Cr(III) and Cr(VI) onto chitosan beads. Results indicated that Cr(III) and Cr(VI) uptake could be described by the Langmuir adsorption model. The maximum adsorption capacities of Cr(III) and Cr(VI) ions onto chitosan beads were 30.03 and 76.92 mg g-1, respectively. Results showed that chitosan beads are favourable adsorbents. The Cr(III) and Cr(VI) ions can be removed from the chitosan beads by treatment with an aqueous EDTA solution.

Keywords: Chitosan Beads, Adsorption Capacities, Adsorption Isotherm, Favourable Adsorbers, Desorption, Cross-Linked Chitosan, Atomic-Absorption-Spectrometry, Metal-Anion Sorption, Reactive Dye, Behavior, Removal, Equilibrium, Ions, Cadmium

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Full Text: [2006\Adsorption12, 267.pdf](2006/Adsorption12,%20267.pdf)

Abstract: Biosorption of Cu2+ and Pb2+ by Cladophora fascicularis was investigated as a function of initial pH, initial heavy metal concentrations, temperature and other co-existing ions. Adsorption equilibriums were well described by Langmuir and Freundlich isotherm models. The maximum adsorption capacities were 1.61 mmol/ g for Cu2+ and 0.96 mmol/ g for Pb2+ at 298K and pH 5.0. The adsorption processes were endothermic and biosorption heats calculated by the Langmuir constant b were 39.0 and 29.6 kJ/ mol for Cu2+ and Pb2+, respectively. The biosorption kinetics followed the pseudo- second order model. No significant effect on the uptake of Cu2+ and Pb2+ by co-existing cations and anions was observed, except EDTA. Desorption experiments indicated that Na2EDTA was an efficient desorbent for the recovery of Cu2+ and Pb2+ from biomass. The results showed that Cladophora fascicularis was an effective and economical biosorbent material for the removal and recovery of heavy metal ions from wastewater.

Keywords: Biosorption, Heavy Metal, Marine Algae, Biosorption Heat, Wastewater, Desorption, Desorbent, Heavy-Metal Biosorption, Marine-Algae, *Saccharomyces-Cerevisiae*, Waste-Water, Pretreated Biomass, Sargassum-Biomass, *Rhizopus-Arrhizus*, Fungal Biomass, Yeast Biomass, Cadmium

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Full Text: [2007\Adsorption13, 83.pdf](2007/Adsorption13,%2083.pdf)

Abstract: Fluoride occurs in some drinking water sources at levels that are hazardous to health. Tests were conducted to assess the ability of a mineral-based adsorbent to take-up fluoride ion. Consequently, in search of novel adsorbent media, crystalline and hydrous iron(III)-zirconium(IV) hybrid oxide (IZHO) was synthesized, and tested to determine its capacity and kinetics for fluoride adsorption. The Fourier Transform Infrared (FTIR) spectrum of IZHO indicated the presence of Fe-O-Zr linkage which showed hybrid nature of the synthetic oxide. The optimum pH range for fluoride adsorption was ranged between 4.0 and 7.0. The analyses of the isotherm equilibrium data using the Langmuir and the Redlich-Peterson model equations by linear and non-linear methods showed that the data fitted better with latter model than the former. Thermodynamic analysis showed spontaneous nature of fluoride adsorption, and that took place with the increase of entropy. The kinetic data obtained for fluoride adsorption on IZHO at pH 6.8 (±0.1) and room temperature (303±2 K) described both the pseudo-first order and the reversible first-order equations equally well (r(2)=similar to 0.98-0.99), and better than pseudo second order equation (r(2)= similar to 0.96-0.98) for higher concentrations (12.5 and 25.0 mg/dm3) of fluoride. The kinetics of fluoride adsorption on the mixed oxide took place with boundary layer diffusion. External mass transport with intra-particle diffusion phenomena governed the rate limiting process, which has been confirmed from the Boyd poor non-linear kinetic plots.

Keywords: Activated Alumina, Adsorbent, Adsorption, Adsorption Kinetics, Analysis, Aqueous-Solution, Boundary Layer, Capacity, Diffusion, Donnan Dialysis, Drinking Water, Drinking-Water, Entropy, Equilibrium, Fluoride, Fly-Ash, FTIR, Health, Intra-Particle Diffusion, Intraparticle Diffusion, Ions, Iron(III)-Zirconium(IV) Oxide, Isotherm, Kinetic, Kinetics, Langmuir, Linkage, Low-Cost Materials, Media, Methods, Model, Oxide, pH, Pseudo-First-Order, Pseudo-Second-Order, Redlich-Peterson, Removal, Room Temperature, Sorption, Temperature, Thermodynamic, Transport, Waste, Water

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Full Text: [2007\Adsorption13, 95.pdf](2007/Adsorption13,%2095.pdf)

Abstract: In the developing countries where the cost is often a decisive factor, extensive studies were undertaken to test the most effective factors on the preparation, optimization and validation of the magnetic particles (or, more accurately, magnetizable particles) for removal of heavy metals from wastewaters. The objective of the proposed work was focused to provide promising solid-phase materials, which, are relatively in expensive and combine high surface capacity with fast efficient treatment. Four various metal oxides including hydrous ferric oxide (HFO), hydrous stannic oxide (HSO) and mixed ferric/stannic oxide (HMO), were prepared by precipitation with ammonia from metal chloride solutions. Two mixed oxides were prepared with different Sn/Fe ratios of 50% and 20%. Optimal conditions for the activation of these particles and the subsequent mixing of various metals oxides are tested together with the utility of the method to get a new composite material with developed chemical characteristics over their individual metal oxides. Factors affecting the sorption behavior of the prepared samples in basic and acid media were elucidated. The magnetic treatment procedure using the mixed oxide (50%) enables the equilibration step to be carried out rapidly mainly due to ferric oxide during the magnetization process and efficiently due to high capacity of the stannic oxide. A key factor in achieving very high uptake percentage is the reduction of non-specific binding of various heavy metals to the solid phase support. This is usually achieved by increasing the ion exchange capability, in addition to their adsorption process.

Keywords: Heavy Metals, Magnetic Technology, Composite Oxide

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Full Text: [2007\Adsorption13, 121.pdf](2007/Adsorption13,%20121.pdf)

Abstract: This paper presents experimental data on methanol sorption on new composite sorbents which consist of mesoporous silica gels and calcium chloride confined to their pores. Sorption isobars and XRD analysis showed the formation of a solid crystalline solvate CaCl22MeOH at low methanol uptake, while at higher uptake the formation of the CaCl2–methanol solution occurred. The solution confined to the silica pores showed the sorption properties similar to those of the CaCl2–methanol bulk solution. Calorimetric and isosteric analyses showed that the heat of methanol sorption depends on the methanol uptake, ranging from 38±2 kJ/mol for the solution to 81±4 kJ/mol for the solid crystalline phase CaCl22MeOH. The above mentioned characterizations allowed the evaluation of the methanol sorption and the energy storage capacities, clearly showing that the optimal applications of these new composite sorbents are the methanol removal from gaseous mixtures, heat storage and sorption cooling driven by low temperature heat.

Keywords: Sorption, Methanol, Silica Gel, Confined Calcium Chloride, Heat Storage

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Full Text: [2007\Adsorption13, 129.pdf](2007/Adsorption13,%20129.pdf)

Abstract: Steam activated carbons from oil-palm shells were prepared and used in the adsorption of phenol. The activated carbon had a well-developed mesopore structure which accounted for 45% of the total pore volume. The BET surface area of the activated carbon was 1183 m2/g and a total pore volume of 0.69 cm3/g using N2 adsorption at 77 K. The adsorption capacity of the activated carbon for phenol was 319 mg/g of adsorbent at 298 K. The adsorption isotherms could be described by both the Langmuir-Freundlich and the Langmuir equations. The adsorption kinetics consisted of a rapid initial uptake phase, followed by a slow approach to equilibrium. A new multipore model is proposed that takes into account of a concentration dependent surface diffusion coefficient within the particle. This model is an improvement to the traditional branched pore model. The theoretical concentration versus time curve generated by the proposed model fitted the experimental data for phenol adsorption reasonably well. Phenol adsorption tests were also carried out on a commercial activated carbon known as Calgon OLC Plus 12×30 and the agreement between these adsorption data and the proposed model was equally good.

Keywords: Activated Carbon, Oil-Palm Shell, Phenol Adsorption, Kinetic Model, Surface Diffusion

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Full Text: [2007\Adsorption13, 149.pdf](2007/Adsorption13,%20149.pdf)

Abstract: In this study, the adsorption of an industrial dye Supranol Yellow 4GL onto Cetyltrimethylammonium-bentonite (CTAB-bentonite) is investigated. The organobentonite is synthesised by exchanging cetyltrimethylammonium cations (CTAB) with inorganic ions on the surface of bentonite. The adsorption of Supranol Yellow 4GL onto organobentonite is found to be maximum when the concentration of CTAB exchanged is 100% according to the cation exchange capacity of the clay (CEC). The modification of organobentonite is examined using XRD and FTIR techniques.

The effect of the process parameters such as: contact time, adsorbate concentration, adsorbent dose, pH and temperature are reported. Nearly 1200 seconds of contact time are found to be sufficient for the adsorption to reach equilibrium. The pseudo second order model is used to describe the kinetic data, and the rate constant is therefore evaluated. The dye adsorption to organobentonite is characterized by monolayer isotherm and caused by adsorption with relatively strong uptake. The Langmuir and Freundlich models adsorption are applied to describe the isotherm equilibrium and to determine its constants. The Langmuir and Freundlich models agree well with the experimental data with a adsorption capacity of 0.5 g of dye per g of organobentonite. A better fixation was obtained at acidic pH. The effect of temperature on the adsorption of dye has been also studied and the thermodynamic parameters ΔH, ΔS, ΔG, were determined. Organobentonite is found to be effective for removing Supranol Yellow 4GL dye from wastewater.

Keywords: Acid Dye, Adsorbent, Adsorbent Dose, Adsorbents, Adsorption, Adsorption Capacity, Aqueous-Solutions, Bentonite, Capacity, Cation, Cation Exchange, Cation-Exchange Capacity, Clay, Color Removal, CTAB, Dye, Dye Adsorption, Equilibrium, Experimental, Freundlich, Ftir, Isotherm, Kinetic, Langmuir, Model, Models, Modification, Monolayer, Montmorillonites, Organobentonite, Peat, pH, Pseudo-Second-Order, Sorption, Supranol Yellow 4GL, Techniques, Temperature, Textile Waste-Water, Thermodynamic, Thermodynamic Parameters, Wastewater, XRD

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Full Text: [2007\Adsorption13, 159.pdf](2007/Adsorption13,%20159.pdf)

Abstract: This study aims to clarify the effects of carbon activation type and physical form on the extent of adsorption capacity and desorption capacity of a bi-solute mixture of phenol and 2-chlorophenol (2-CP). For this purpose, two different PACs; thermally activated Norit SA4 and chemically activated Norit CA1, and their granular countertypes with similar physical characteristics, thermally activated Norit PKDA and chemically activated Norit CAgran, were used. The thermally activated carbons were better adsorbers for phenol and 2-CP compared with chemically activated carbons, but adsorption was more reversible in the latter case. 2-CP was adsorbed preferentially by each type of activated carbon, but adsorption of phenol was strongly suppressed in the presence of 2-CP. The simplified ideal adsorbed solution (SIAS) model underestimated the 2-CP loadings and overestimated the phenol loadings. However, the improved and modified forms of the SIAS model could better predict the competitive adsorption. The type of carbon activation was decisive in the application of these models. For each activated carbon type, phenol was desorbed more readily in the bi-solute case, but desorption of 2-CP was less compared with single-solute. This was attributed to higher energies of 2-CP adsorption.

Keywords: Activated Carbon, Activation Method, 2-Chlorophenol, Competitive Adsorption, Desorption, Irreversible Adsorption, Phenol, Sias Model

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Full Text: [2007\Adsorption13, 267.pdf](2007/Adsorption13,%20267.pdf)

Abstract: Novel sorbents for rapid dynamic sorption processes based on the concept of sorption-active shell/sorption-inert core composite granules are presented. Tailoring such composites to a technical sorption process is exemplified by NaX and LiLSX zeolites as sorption-active components. Composite granules are characterized by various techniques specifically by oxygen-VPSA pilot-scale tests and liquid-phase sorption experiments. The composite sorbents exhibit excellent potential for efficiency enhancement of existing processes by lowering investment and operating costs.

Keywords: Adsorption, Composite, Composites, Costs, Cu2+-Ion Kinetics, Efficiency, Experiments, Gas-Phase and Liquid-Phase Sorption, Granulation, Mixtures of Non-Electrolytes, Oxygen Vpsa, Potential, Sorption, Sorption Process, Sorption-Inert Cores, Techniques, Zeolite, Zeolite-Sorbent Shapes, Zeolites, Zeolites NaX and Lilsx

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Full Text: [2008\Adsorption14, 11.pdf](2008/Adsorption14,%2011.pdf)

Abstract: The adsorption of five acidic dyes on chitosan—a by-product from waste crustacean shell—has been studied. The equilibrium data have been studied using Langmuir, Freundlich and Redlich-Peterson equations. The best correlations are obtained using the Langmuir isotherm suggesting the mechanism involves one process step of dyes complexing with the free amino group. The effect of chitosan particle size was investigated and showed an increase in adsorption capacity with decreasing particle size indicating that the available external surface was an important factor. Increasing solution temperature resulted in an increase in adsorption capacity indicating an exothermic process with a negative ΔH. Finally, the effect of varying the percentage degree of deacetylation showed that from 52% to 97% resulted in decrease in the dye adsorption capacity suggesting that more amorphisation may cause changes in the internal structure of chitosan and reduce the capacity.

Keywords: Acid Dyes, Chitosan, Equilibrium, Temperature, Particle Size, Deacetylation

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Full Text: [2008\Adsorption14, 21.pdf](2008/Adsorption14,%2021.pdf)

Abstract: Sorption of Ni2+ and Cd2+ as heavy metals ions at the interface of the binary oxide TiO2-SiO2 was investigated. In addition, physical properties of TiO2-SiO2 matrices such as BET surface area, X-ray diffraction, and point of zero charge (pH(PZC)) were measured. Statistical design of experiments was applied to find the conditions of sorption at which the maximum heavy metal removal was achieved. A second order polynomial function was used to correlate the independent variables (pH, metal ion concentration, and shaking time) and response (heavy metal removal). Values of regression parameters were determined by the computer program, Design expert (R) (Stat-Ease Inc.). The quality of fit of the polynomial model equation was expressed by the regression coefficient R-2. The sorption results showed that the pH is the most significant factor. In turn, the sorbed percentage reached 100% at high initial concentration and long shaking times due to formation of hydroxyl compounds between the ions and TiO2-SiO2 matrices. The results show that there is a Gaussian (normal) distribution of residuals (squared differences between experimentally observed and predicted values from the model), and also that the differences between observed and predicted values are in the range of +/- 5%. These indicate that experiments were well-conducted and the results have no significant error.

Keywords: Adsorption, Cadmium, Cd2+, Complexes, Experimental Design, Heavy Metal, Heavy Metal Removal, Heavy Metals, Ions, Lead, Metal, Metals, Netherlands, Ni2+, Oxidation, pH, Quality, Removal, Silica-Gel, Sorption, Sorption, Statistical Design, TiO2 Photocatalysis, TiO2-SiO2, Water, X-Ray Diffraction

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Full Text: [2008\Adsorption14, 55.pdf](2008/Adsorption14,%2055.pdf)

Abstract: The metal anions of vanadium(V) and chromium(VI) in aqueous solution can be effectively adsorbed by Zr(IV)-impregnated collagen fiber (ZrICF). The maximum adsorption capacity of V(V) takes place within the pH range of 5.0 to 8.0, while that of Cr(VI) is within the pH range of 6.0 to 9.0. When the initial concentration of metal ions was 2.00 mmol L-1 and the temperature was 303 K, the adsorption capacity of V(V) on Zr-ICF was 1.92 mmol g-1 at pH 5.0, and the adsorption capacity of Cr(VI) was 0.53 mmol g-1 at pH 7.0. As temperature increased, the adsorption capacity of V(V) increased, while that of Cr(VI) was almost unchanged. The adsorption isotherms of the anionic species of V(V) and Cr(VI) can be fit by the Langmuir equation. The adsorption rate of V(V) follows the pseudo-first-order rate model, while the adsorption rate of Cr(VI) follows the pseudo-second-order rate model. Furthermore, ZrICF shows high adsorption selectivity to V(V) in the mixture solution of V(V) and Cr(VI). Practical applications of ZrICF could be expected in consideration of its performance in adsorption of V(V) and Cr(VI).

Keywords: Adsorbent, Adsorption, Adsorption Isotherms, Aqueous Solution, Aqueous-Solution, Arsenate Ions, Carbon, China, Chitosan, Chromium, Chromium(VI), Collagen Fiber, Fluoride, Hexavalent Chromium, Isotherms, Langmuir, Langmuir Equation, Metal, Metal Anion, Metal Ions, Netherlands, Persimmon Tannin Gel, pH, Phosphate, Removal, Sorption, Temperature, Vanadium(V), Zr(IV)

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Full Text: [2008\Adsorption14, 73.pdf](2008/Adsorption14,%2073.pdf)

Abstract: The batch removal of arsenic from aqueous solution using low-cost adsorbent (powdered eggshell) under the influences of initial arsenic ion concentrations (0.50 to 1.50 mg/L), pH (3.2 to 11.5) and particle size of eggshells (63 to 150 μm) were investigated. Eggshells were collected from Obafemi Awolowo University, Ile-Ife, washed with distilled water, air dried, ground into powder and sieved into different sieve sizes using British standard sieve. Powdered eggshells were stored in a desiccator for use. Adsorption isotherms and dynamics of arsenic onto PES were studied. The study revealed that there was a slight reduction in the rate of adsorption of arsenic ion onto the larger particle size, but adsorption capacity and parameters were unaffected. Powdered eggshell with particle size of 63 μm removed up to 99.6% of the 1.5 mg/L of arsenic ion in synthetic water within the first 6 hours but decreased to 98.4% and 97.4% when the powdered eggshell particle sizes were increased to 75 and 150 μm respectively. The pH optimum for arsenic removal was 7.2. The adsorption isotherms and adsorption dynamic kinetic studied through the use of graphical method revealed that Freundlich, activated sludge adsorption and pseudo second-order kinetic models correlate significantly with the experimental data with correlation coefficient of not less than 0.964.

Keywords: Activated Sludge, Adsorbent, Adsorption, Adsorption Isotherms, Adsorption Kinetics, Amorphous Iron Hydroxide, Aqueous Solution, Aqueous Solutions, Arsenic, Chitosan, Drinking-Water, Equilibrium, Ions, Isotherms, Kinetic, Kinetic Models, Kinetics, Low-Cost Adsorbents, Netherlands, Oxide-Coated Sand, pH, Removal, Size, Sludge, Solution, Sorption, Starch, Systems, Water

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Full Text: [2008\Adsorption14, 85.pdf](2008/Adsorption14,%2085.pdf)

Abstract: In the present study, adsorbent is prepared from neem leaves and used for Cr(VI) removal from aqueous solutions. Neem leaves are activated by giving heat treatment and with the use of concentrated hydrochloric acid (36.5 wt%). The activated neem leaves are further treated with 100 mmol of copper solution. Batch adsorption studies demonstrate that the adsorbent prepared from neem leaves has a significant capacity for adsorption of Cr(VI) from aqueous solution. The parameters investigated in this study include pH, contact time, initial Cr(VI) concentration and adsorbent dosage. The adsorption of Cr(VI) is found to be maximum (99%) at low values of pH in the range of 1-3. A small amount of the neem leaves adsorbent (10 g/l) could remove as much as 99% of Cr(VI) from a solution of initial concentration 50 mg/l. The adsorption process of Cr(VI) is tested with Langmuir isotherm model. Application of the Langmuir isotherm to the system yielded maximum adsorption capacity of 62.97 mg/g. The dimensionless equilibrium parameter, R (L), signifies a favorable adsorption of Cr(VI) on neem leaves adsorbent and is found to be between 0.0155 and 0.888 (0 < R-L < 1). The adsorption process follows second order kinetics and the corresponding rate constant is found to be 0.00137 g/(mg) (min).

Keywords: Adsorbent, Adsorbents, Adsorption, Aqueous Solution, Aqueous Solutions, Aqueous-Solution, Batch, Batch Studies, Carbon, Copper, Equilibrium, Fly-Ash, Heavy-Metals, Hexavalent Chromium, India, Isotherm, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Neem Leaves, Netherlands, pH, Pore, Removal, Solution, Waste-Water

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Full Text: [2008\Adsorption14, 101.pdf](2008/Adsorption14,%20101.pdf)

Abstract: We have re-examined the problem of the interaction of melanins with metal ions. Metal ions are normal constituents of the pigment, but in some cases they can be related to pathologies, mainly at the level of the skin (Cu2+ and Fe3+) and of the central nervous system (Fe2+ and Mn2+). Our approach has been based on the mechanisms of adsorption on the particle surface, by the use of theoretical adsorption isotherms and kinetic models. Although this analysis doesn’t give detailed information on the specific sites involved, it is useful to better characterize the surface behaviour of the colloidal melanin. The results obtained demonstrate that the affinity of melanin for metal ions is very high, comparable to the most efficient materials employed in decontamination and recovery techniques. Moreover, our results demonstrate that three-parameters models, such as Langmuir-Freundlich, Redlich-Peterson and Toth equations, fit the experimental data with great accuracy and that the adsorption follows pseudo-second-order kinetics.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherms, Adsorption Kinetics, Analysis, Binding-Sites, Electron-Spin-Resonance, Human Substantia-Nigra, Interaction, Isotherms, Italy, Kinetic, Kinetic Models, Kinetics, Metal, Metal Ions, Microporosity, Netherlands, Neuromelanin, Pseudo-Second-Order Kinetics, Removal, Sorption, Spectroscopy, Surface Structure, Synthetic Melanin, Synthetic Melanins

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Full Text: [2008\Adsorption14, 111.pdf](2008/Adsorption14,%20111.pdf)

Abstract: In the present study a new low cost, easily available and environmentally friendly adsorbent was used for removal of Cr(VI). The Cr(VI) removal efficiency of the adsorbent was studied as a function of contact time, pH, adsorbent dose, adsorbate concentration, temperature and stirring speed. Different adsorption model equations for kinetics, isotherm and rate mechanism of the process were used to find the best model, which fit well to the experimental data. A full factorial design of nk type was used to find a mathematical relation between the percentage of adsorption and variables affecting the adsorption process such as time, pH, adsorbate concentration and temperature. Using the Students ‘t’ test, the significance of each term of the derived equation was tested. The insignificant terms were removed from the derived equation. The adequacy of the equation after removing the insignificant terms was tested using the Fisher adequacy test. From the factorial design analysis it is found that pH has the most pronounced effect followed by time, temperature and the adsorbate concentration. A column study was performed using the optimum operating conditions.

Keywords: Cr(VI) Removal, Waste Water Treatment, Kinetics, Isotherm, Rate Mechanism, Factorial Design, Column Studies

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Full Text: [2008\Adsorption14, 791.pdf](2008/Adsorption14,%20791.pdf)

Abstract: Kaolinite clay obtained from Ubulu-Ukwu, Delta state in Nigeria was modified with polyvinyl alcohol (PVA) reagent to obtain PVA-modified Kaolinite clay adsorbent. Scanning Electron Microscopy (SEM) of the PVA-modified adsorbent suggests that Kaolinite clay particles were made more compact in nature with no definite structure. Modification of Kaolinite clay with PVA increased its adsorption capacity for 300 mg/L Pb2+ and Cd2+ by a factor of at least 6, i.e., from 4.5 mg/g to 36.23 mg/g and from 4.38 mg/g to 29.85 mg/g, respectively, at 298 K. Binary mixtures of Pb2+ and Cd2+ decreased the adsorption capacity of Unmodified Kaolinite clay for Pb2+ by 26.3% and for Cd2+ by 0.07%, respectively. In contrast, for PVA-modified Kaolinite clay, the reductions were up to 50.9% and 58.5% for Pb2+ and Cd2+, respectively.

The adsorption data of Pb2+ and Cd2+ onto both Unmodified and PVA-modified Kaolinite clay adsorbents were found to fit the Pseudo-Second Order Kinetic model (PSOM), indicating that adsorption on both surfaces was mainly by chemisorption and is concentration dependent.

However, kinetic adsorption data from both adsorbent generally failed the Pseudo-First order Kinetic model (PFOM) test. Extents of desorption of 91% Pb2+ and 94% Cd2+ were obtained, using 0.1 M HCl, for the Unmodified Kaolinite clay adsorbent. It was found that 99% Pb2+ and 97% Cd2+, were desorbed, for PVA-modified Kaolinite clay adsorbents within 3 min for 60 mg/L of the metal ions adsorbed by the adsorbents.

Keywords Adsorption, Desorption, Kaolinite, Kinetic, Mode, Modified Adsorbent

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Full Text: [2009\Ads-J Int Ads Soc15, 181.pdf](2009/Ads-J%20Int%20Ads%20Soc15,%20181.pdf)

Abstract: It is shown that the empirical pseudo-second order kinetic equation is a very efficient formula to correlate the kinetic data generated by applying theoretical expressions developed from the fundamental SRT (Statistical Rate Theory) approach to the interfacial transport. This is especially true when the most popular linear representation is used in which time/adsorbed amount is plotted vs. time. However, the commonly observed goodness of such linear plots does not necessarily speak for the applicability of the pseudo-second order kinetic equation. A reliable estimation, for instance, of the equilibrium adsorbed amount is possible only when a substantial part of a kinetic isotherms corresponds to the conditions close to equilibrium. Energetic surface heterogeneity increases the goodness of these linear regressions. Then, experimental errors have only little effect on the pseudo-second linear plots.

Keywords: Adsorbents, Adsorption, Aqueous-Solution, Biosorption, Copper, Dye, Estimating The Equilibrium Adsorbed Amount, Kinetics, Models, Pseudo-Second Order Equation, Removal, Solute Adsorption, Sorption, Statistical Rate Theory, Transport

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Full Text: [2009\Ads-J Int Ads Soc15, 300.pdf](2009/Ads-J%20Int%20Ads%20Soc15,%20300.pdf)

Abstract: Mesoporous silica materials were synthesized by applying Pluronic type polymers as pore creating agents. The composition of a reacting mixture and the process conditions were changed in a synthesis procedure. These changes differentiated the characteristics of porous structure of obtained sorbents. The parameters characterizing the pore structure were estimated and the changes of pore arrangement of obtained materials being a result of different synthesis conditions were investigated. The small-angle XRD results indicate that F cubic structure was formed what confirms the cage-like ordering of the synthesized silicas.

Keywords: Adsorption, Copolymer, Equilibrium, Kinetics, Kinetics of Adsorption From Solution, Mesoporous Silica, Mesoporous Silicas, Sba-15, Solutes, Sorption Processes, Standard, Triblock

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Full Text: [2009\Ads-J Int Ads Soc15, 381.pdf](2009/Ads-J%20Int%20Ads%20Soc15,%20381.pdf)

Abstract: The organo-attapulgite was prepared using hexadecyltrimethylammonium bromide (HTMAB) with equation equivalent ratio of HTMAB to CEC of attapulgite added and then used as adsorbent for the removal of Congo red (CR) anionic dye from aqueous solution. Adsorbent characterizations were investigated using infrared spectroscopy and X-ray diffraction. The effects of contact time, temperature, pH and initial dye concentration on organo-attapulgite adsorption for CR were investigated. The results show that the amount adsorbed of CR on the organo-attapulgite increase with increasing dye concentration, temperature, and by decreasing pH. The adsorption kinetics was studied with the pseudo-first-order, pseudo-second-order and intraparticle diffusion models, and the rate constants were evaluated. It was found that the adsorption mechanisms in the dye/organo-attapulgite system follow pseudo-second-order kinetics with a significant contribution of film diffusion. Equilibrium data fitted perfectly with Langmuir isotherm model compared to Freundlich isotherm model, and the maximum adsorption capacity was 189.39 mg g-1 for the adsorbent. Kinetic and desorption studies both suggest that chemisorption should be the major mode of CR removal by the organo-attapulgite. The results indicate that HTMAB-modified attapulgite could be employed as low-cost material for the removal of Congo red anionic dye from wastewater.

Keywords: Acid Dyes, Activated Carbon, Adsorption, Aqueous-Solutions, Azo Dyes, Congo Red, Desorption, Equilibrium, Fly-Ash, Isotherms, Kinetics, Methylene-Blue, Organo-Attapulgite, Palygorskite, Sepiolite, Waste-Water

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Full Text: [2009\Ads-J Int Ads Soc15, 390.pdf](2009/Ads-J%20Int%20Ads%20Soc15,%20390.pdf)

Abstract: In this work, batch adsorption experiments are carried out for crystal violet dye using mesoporous MCM-41 synthesized at room temperature and sulfate modified MCM-41 prepared by impregnation method using H2SO4 as sulfatising agent. The surface characteristics, pore structure, bonding behavior and thermal degradation of both the MCM-41 samples are characterized by nitrogen adsorption/desorption isotherms, X-ray diffraction (XRD) patterns, Fourier transform infrared (FT-IR) spectroscopy and thermo gravimetric analysis (TGA). The adsorption isotherm, kinetics and thermodynamic parameters are investigated for crystal violet (CV) dye using the calcined and sulfated MCM-41. Results are analysed using Langmuir, Freundlich and Redlich-Peterson isotherm models. It is found that the Freundlich model is an appropriate model to explain the adsorption isotherm. The highest adsorption capacity achieved is found to be 3.4×10-4 mol g-1 for the sulfated MCM-41. The percentage removal of crystal violet dye increases with increase in the pH for both the MCM-41 adsorbents. Kinetics of adsorption is found to follow the second-order rate equation. From the thermodynamic investigation, it is evident that the adsorption is exothermic in nature.

Keywords: Activated Carbon, Adsorbents, Adsorption, Basic Dye, Crystal Violet, Isotherm, Kinetics, Malachite Green, MCM-41, Methylene-Blue, Removal, Sewage-Sludge, Sorption, Sulfated, Waste-Water

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Full Text: [2009\Ads-J Int Ads Soc15, 439.pdf](2009/Ads-J%20Int%20Ads%20Soc15,%20439.pdf)

Abstract: Coir pith obtained from the coir industry as waste biomass was used to prepare activated carbon by chemical activation using phosphoric acid (H3PO4). The influences of activation temperature and lasting time of activation on specific surface areas (SSA) of the activated carbons were observed. Physical characteristics of the activated carbon were investigated using X-ray diffraction (XRD), infra-red spectroscopy (IR), surface area analyzer, scanning electron microscopy (SEM), thermal analysis and potentiometric titration. The feasibility of using activated carbon for the removal of phenol (P), p-chlorophenol (PCP) and p-nitrophenol (PNP) from water and petroleum refinery industry effluents was investigated. The effects of contact time, adsorbent dose, ionic strength and initial concentration on the adsorption of phenols onto the activated carbon were investigated. The optimum pH for the maximum removal of phenols was 6.0. The equilibrium adsorption data of phenols were correlated to Langmuir and Freundlich isotherm models, the latter being the best fit of the experimental data. Dynamics of the sorption process and mass transfer were investigated using McKay and Urano-Tachikawa models. Adsorption kinetic data fits the Urano-Tachikawa kinetic model. The utility of the adsorbent was tested by using petroleum refinery industry effluent. The adsorbed phenols can be recovered by treatment with 0.1 M NaOH solution.

Keywords: Activated Carbon, Activated Carbons, Activation, Adsorbent, Adsorbent Dose, Adsorption, Adsorption Isotherm, Adsorption Kinetic, Analysis, Aqueous-Solutions, Biomass, Carbon, Characteristics, Chemical, Chemical Activation, Coir Pith, Concentration, Data, Desorption, Dyes, Effluents, Electron Microscopy, Equilibrium, Experimental, Feasibility, Fly-Ash, Freundlich, Freundlich Isotherm, Infrared Spectroscopy, Ionic Strength, IR, Isotherm, Kinetic, Kinetic Model, Langmuir, Mass Transfer, Mass Transfer Studies, Model, Models, NaOH, P, pH, Phenol, Phenols, Phosphoric Acid, Pith, Potentiometric Titration, Recovery, Removal, Scanning Electron Microscopy, Sem, Silica, Solution, Sorption, Sorption Process, Specific Surface, Spectroscopy, Strength, Surface, Surface Area, Surface Areas, Temperature, Thermal Analysis, Treatment, Utility, Waste, Waste Biomass, Waste-Water, Water, X-Ray, X-Ray Diffraction, XRD, ZnCl2

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Full Text: [2009\Ads-J Int Ads Soc15, 507.pdf](2009/Ads-J%20Int%20Ads%20Soc15,%20507.pdf)

Abstract: The adsorption behaviour and the micro- and mesopore size distributions of commercial palm kernel shell activated carbons (PKSAC) and other commercial activated carbon are characterized. The results showed that PKSAC are predominantly microporous materials, where micropores account 68-79% of total porosity. On the other hand, commercial activated carbons: Norit SX Plus, Calgon 12x40, and Shirasagi “A” activated carbons contained high mesopore fraction ranging from 33 to 52%. The analysis showed that the degree of mesoporosity of PKSAC is increased steadily with the decrease of particle size. This is due to the presence of channels interconnect the smaller pores in the interior of smaller particle size PKSAC. The smaller size PKSAC particle that is highly mesoporous has preformed better on the adsorption of larger molecules such as methylene blue. On the other hand, bigger size PKSAC particle has better performance on the adsorption of smaller adsorbates such as iodine.

Keywords: Activated Carbon, Activated Carbons, Adsorption, Analysis, Aqueous-Solutions, Behaviour, Carbon, Characteristics, Diffusion, Diffusion, Dyes, Kinetics, Liquid-Phase Adsorption, Mesopore, Mesoporosity, Mesoporous, Metal-Ions, Methylene Blue, Methylene-Blue, Microporous Materials, Nanoporous, Palm Kernel Shell, Palm Kernel Shell Activated Carbons, Particle Size, Performance, Porosity, Potential, Removal, Size, Sorption, Surface

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Full Text: [2010\Adsorption16, 75.pdf](2010/Adsorption16,%2075.pdf)

Abstract: An indigenously prepared zinc chloride activated Ipomoea carnea (morning glory), a low-cost and abundant adsorbent, was used for removal of Cu(II) ions from aqueous solutions in a batch adsorption system. The chemical activating agent ZnCl2 was dissolved in deionised water and then added to the adsorbent in two different ratios 1:1 and 1:0.5 adsorbent to activating agent ratio by weight. Studies were conducted as a function of contact time, initial metal concentration, dose of adsorbent, and pH. Activated Ipomoea carnea (AIC) were characterised using scanning electron microscopy (SEM), iodine number and methylene blue number. High iodine numbers indicates development of micro pores with zinc chloride activation. Maximum adsorption was noted within pH range 6.0(± 0.05). Adsorption process is fast initially and reaches equilibrium after about 4 hours. The kinetic data were analysed using pseudo-first-order and pseudo-second-order models. The pseudo-second-order kinetic model was found to agree well with the experimental data. Adsorption equilibrium data were analyzed using Langmuir and Freundlich isotherm models. The Langmuir model represented the sorption process better than the Freundlich model. Based on the Langmuir isotherm, the monolayer adsorption capacity of Cu(II) ions was 7.855 mg g-1 for AIC (1:1) and 6.934 mg g-1 for AIC (1:0.5).

Keywords: Activation, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Adsorption of Copper, Aqueous Solutions, Aqueous-Solution, Batch, Batch Adsorption, Biosorption, Cadmium, Capacity, Carbon, Chemical, Chloride, Concentration, Copper, Cu(II), Cu(II) Ions, Data, Development, Dissolved, Electron Microscopy, Equilibrium, Experimental, Freundlich, Freundlich Isotherm, Freundlich Model, Function, Heavy-Metals, Industry Waste, Ions, Ipomoea Carnea, Isotherm, Isotherm Models, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Model, Low Cost, Metal, Methylene Blue, Micro- and Meso-Porous Carbon, Model, Models, Monolayer, pH, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Scanning Electron Microscopy, SEM, Solutions, Sorption, Sorption Process, Water, Zinc, Zinc Chloride, Zinc Chloride Activation, ZnCl2

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Full Text: [2010\Adsorption16, 173.pdf](2010/Adsorption16,%20173.pdf)

Abstract: A type of Nb2O5 center dot 3H2O was synthesized and its phosphate removal potential was investigated in this study. The kinetic study, adsorption isotherm, pH effect, thermodynamic study and desorption were examined in batch experiments. The kinetic process was described by a pseudo-second-order rate model very well. The phosphate adsorption tended to increase with a decrease of pH. The adsorption data fitted well to the Langmuir model with which the maximum P adsorption capacity was estimated to be 18.36 mg-Pg-1. The peak appearing at 1050 cm-1 in IR spectra after adsorption was attributed to the bending vibration of adsorbed phosphate. The positive values of both Δ*H*º and Δ*S*º suggest an endothermic reaction and increase in randomness at the solid-liquid interface during the adsorption. Δ*G*º values obtained were negative indicating a spontaneous adsorption process. A phosphate desorbability of approximately 68% was observed with water at pH 12, which indicated a relatively strong bonding between the adsorbed phosphate and the sorptive sites on the surface of the adsorbent. The immobilization of phosphate probably occurs by the mechanisms of ion exchange and physicochemical attraction. Due to its high adsorption capacity, this type of hydrous niobium oxide has the potential for application to control phosphorus pollution.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Kinetic, Application, Aqueous-Solutions, Batch, Batch Experiments, Capacity, Coir Pith, Control, Data, Desorption, Desorption Studies, Endothermic, Experiments, Goethite, Hydrous Niobium Oxide, Immobilization, Interface, Ion Exchange, Ion-Exchange, IR, Isotherm, Isotherms, Kinetic, Kinetic Study, Langmuir, Langmuir Model, Layered Double Hydroxides, Mechanisms, Microemulsion, Model, Oxide, P, pH, pH Effect, Phosphate, Phosphate Adsorption, Phosphate Removal, Phosphorus, Phosphorus Pollution, Pollution, Potential, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Rate, Randomness, Removal, Seawater, Sorption, Surface, Thermodynamic, Vibration, Waste-Water, Water

? Dobrowolski, R. and Otto, M. (2010), Study of chromium(VI) adsorption onto modified activated carbons with respect to analytical application. *Adsorption-Journal of the International Adsorption Society*, **16** (4-5), 279-286.

Full Text: [2010\Adsorption16, 279.pdf](2010/Adsorption16,%20279.pdf)

Abstract: Two different types of modification of activated carbon, by treatment with concentrated solution of HNO3 and outgassing treatment at high temperature, were studied in order to obtain the most effective adsorption of chromium(VI) ions from water solution. The basic parameters affecting the adsorption capacity of Cr(VI) ions on modified activated carbons were studied in details and the effect of modifications of activated carbons has been determined by studying the initial runs of adsorption isotherms. The obtained Cr(VI) adsorption isotherms were well fitted in the Freundlich equation. The reduction of Cr(VI) to Cr(III) and further ion exchange mechanism of adsorption onto oxidizing activated carbon and surface precipitation to Cr(OH)3 in case of outgassing activated carbon were found as the main adsorption mechanisms of Cr(VI) ions onto modified activated carbons. Presence of chlorides and nitrates in studied adsorption system strongly decreased the adsorption ability of Cr(VI) onto outgassing activated carbon and mechanism of this behavior is proposed.

Keywords: Activated Carbon, Activated Carbons, Adsorption, Adsorption Capacity, Adsorption Isotherms, Adsorption Mechanisms, Application, Atomic Absorption Spectrometry, Atomic-Absorption Spectrometry, Behavior, Capacity, Carbon, Chromium Adsorption, Chromium(VI), Cr(III), Cr(VI), Cr(VI) Adsorption, Enrichment, Freundlich, Freundlich Equation, Ion Exchange, Ion-Exchange, Ions, Isotherms, Mechanism, Mechanism of Adsorption, Mechanisms, Modification, Modified, Modified Activated Carbons, Nitrates, Precipitation, Preconcentration, Reduction, Solution, Sorption, Speciation, Surface, Surface Precipitation, System, Temperature, Treatment, Water, Water Samples

? Derylo-Marczewska, A., Miroslaw, K., Marczewski, A.W. and Sternik, D. (2010), Studies of adsorption equilibria and kinetics of o-, m-, p-nitro- and chlorophenols on microporous carbons from aqueous solutions. *Adsorption-Journal of the International Adsorption Society*, **16** (4-5), 359-375.

Full Text: [2010\Adsorption16, 359.pdf](2010/Adsorption16,%20359.pdf)

Abstract: The studies of adsorption of o-, m-, and p-nitrophenols and chlorophenols from aqueous solutions on microporous activated carbon are presented. The adsorption isotherms were measured at different temperatures: 288, 298, 308 and 318 K. The thermal analysis was applied in order to find the differences in solute interactions with adsorbent surface. The kinetic dependences were measured and the relations between position of adsorbate functional groups and adsorption rate were discussed. The adsorption data are analyzed in terms of the theory of physical adsorption on energetically non-homogeneous solids. The relations between the adsorbate structure and adsorption effectiveness, and the influence of temperature are discussed.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Equilibria And Kinetics, Adsorption From Solutions, Adsorption Isotherms, Adsorption Rate, Analysis, Aqueous Solutions, Aromatics, Behavior, Carbon, Chlorophenols, Data, Effectiveness, Equilibria, Functional Groups, Isotherms, Kinetic, Kinetics, Mesoporous Carbons, Microporous Carbon, Models, Physical, Regeneration, Relations, Size, Solutions, Sorption, Structure, Substituted Phenols, Surface, Surface-Chemistry, Temperature, Theory, Thermal Analysis

? Kuchta, B., Firlej, L., Roszak, S. and Pfeifer, P. (2010), A review of boron enhanced nanoporous carbons for hydrogen adsorption: Numerical perspective. *Adsorption-Journal of the International Adsorption Society*, **16** (4-5), 413-421.

Full Text: [2010\Adsorption16, 413.pdf](2010/Adsorption16,%20413.pdf)

Abstract: We review the current achievements in the numerical studies of adsorption of molecular hydrogen in boron substituted nanoporous carbons. We show that the enhanced attraction of H-2 by boron-substituted all-carbon structures may allow designing new porous materials with modulated capacity for hydrogen adsorption. Such new structures are characterized by modification of energy landscape of adsorbing surfaces extending beyond the vicinity of substituted atom over several graphene carbon sites, and show strong surface heterogeneity. Although the theoretical conception and description of boron-substituted carbons made a considerable progress during the last decade, the preparation of these materials involves tedious procedures and still needs to be improved.

Keywords: Ab-Initio, Adsorption, BC3, Boron, Capacity, Carbon, Carbons, Doped Graphite Surfaces, Electronic-Structure, H2, Hydrogen, Hydrogen Adsorption, Metal-Organic Framework, Micro-Pores, Modification, Nanotubes, Single-Walled Carbon, Storage, Structural-Properties, Substituted Carbon, Surfaces

? Jiang, J.Z. and Ng, F.T.T. (2010), Production of low sulfur diesel fuel via adsorption: an equilibrium and kinetic study on the adsorption of dibenzothiophene onto NaY zeolite. *Adsorption-Journal of the International Adsorption Society*, **16** (6), 549-558.

Full Text: [2010\Adsorption16, 549.pdf](2010/Adsorption16,%20549.pdf)

Abstract: The adsorption of dibenzothiophene (DBT) in hexadecane onto NaY zeolite has been studied by performing equilibrium and kinetic adsorption experiments. The influence of several variables such as contact time, initial concentration of DBT and temperature on the adsorption has been investigated. The results show that the isothermal equilibrium can be represented by the Langmuir equation. The maximum adsorption capacity at different temperatures and the corresponding Langmuir constant (K-L) have been deduced. The thermodynamic parameters (ΔGº, ΔHº, ΔSº) for the adsorption of DBT have also been calculated from the temperature dependence of KL using the van’t Hoff equation. The value of ΔHº, ΔSº are found to be -30.3 kJ mol-1 and -33.2 J mol-1 K-1 respectively. The adsorption is spontaneous and exothermic. The kinetics for the adsorption process can be described by either the Langmuir model or a pseudo-second-order model. It is found that the adsorption capacity and the initial rate of adsorption are dependent on contact time, temperature and the initial DBT concentration. The low apparent activation energy (12.4 kJ mol-1) indicates that adsorption has a low potential barrier suggesting a mass transfer controlled process. In addition, the competitive adsorption between DBT, naphthalene and quinoline on NaY was also investigated.

Keywords: Activation, Activation Energy, Adsorption, Adsorption Capacity, Adsorptive Model, Barrier, Capacity, Cell Applications, Competitive, Competitive Adsorption, Concentration, Deep Desulfurization, Dibenzothiophene, Diesel Fuel, Energy, Enthalpy of Adsorption, Equilibrium, Exothermic, Experiments, Flow Calorimetry, Isothermal, Jet Fuel, Kinetic, Kinetic Adsorption, Kinetic Study, Kinetics, Langmuir, Langmuir Equation, Langmuir Model, Liquid Fuels, Mass Transfer, Model, Naphthalene, Nay Zeolite, Pi-Complexation, Potential, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Quinoline, Selective Adsorption, Sulfur, Sulfur Removal, Temperature, Thermodynamic, Thermodynamic Parameters, Transportation Fuels, Value, Vapor-Phase, Y-Zeolites, Zeolite

# Title: Adsorption on New and Modified Inorganic Sorbents

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? Bogillo, V.I. (1996), Kinetics of organic compounds chemisorption from the gas phase on oxides surface. *Adsorption on New and Modified Inorganic Sorbents*, **99**, 237-284.

Keywords: Acid, Adsorption, Chemisorption, Cross-Polarization, Dehydroxylated Silica, Diffusion, Heterogeneous Surfaces, Pyrogenic Silica, Reactivity, Sites, Solid-Surfaces

# Title: Adsorption: Science and Technology

Ruthven, D.M. (1988), Adsorption kinetics. in *Adsorption: Science and Technology*, (Edited by Rodrigues, A.E., LeVan, M.D. and Tondeur, D.), NATO ASI Series, Kluwer Academic Publishers, Dordecht, Boston, London, **158**, 87-114.

# Title: Adsorption Science & Technology

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Chemistry, Physical: Impact Factor 0.406, 85/90 (1999); Impact Factor 0.543, 78/91 (2000); Impact Factor 0.457, 86/93 (2001); Impact Factor 0.725, 73/95 (2002); Impact Factor 0.484, 89/101 (2003); Impact Factor 0.571, 94/108 (2004); Impact Factor 0.643, 99/111 (2005); Impact Factor 0.344, 117/121 (2009); Impact Factor 0.559, 111/127 (2010)

Engineering, Chemical: Impact Factor 0.406, 65/110 (1999); Impact Factor 0.543, 48/117 (2000); Impact Factor 0.457, 66/123 (2001); Impact Factor 0.725, 48/126 (2002); Impact Factor 0.484, 70/119 (2003); Impact Factor 0.571, 63/116 (2004); Impact Factor 0.643, 62/116 (2005); Impact Factor 0.344, 100/128 (2009); Impact Factor 0.559, 95/134 (2010)

Seidel, A., Reschke, G., Friderich, S. and Gelbin, D. (1986), Equilibrium adsorption of two-component organic solute from aqueous solutions onto activated carbon. *Adsorption Science & Technology*, **3**, 189-199.

Full Text: 1986\Ads Sci Tec3, 189.pdf

McKay, G., Kelly, J.C. and McConvey, I.F. (1992), The adsorption of pollutants from aqueous effluents using a two-resistance mass-transfer model. *Adsorption Science & Technology*, **8**, 13-33.

Full Text: 1992\Ads Sci Tec8, 13.pdf

Hasany, S.M. and Chaudhary, M.H. (1995), Removal of cobalt from aqueous solutions using Haro River sand. *Adsorption Science & Technology*, **12**, 307-315.

Full Text: 1995\Ads Sci Tec12, 307.pdf

Nassar, M.M., Hamoda, M.F. and Radwan, G.H. (1996), Utilization of palm-fruit bunch particles for the adsorption of dyestuff wastes. *Adsorption Science & Technology*, **13** (1), 1-6.

Full Text: 1996\Ads Sci Tec13, 1.pdf

Abstract: Particles prepared from palm-fruit bunches have been used in batch tests for the adsorption of a basic dye (BR18) over a range of initial dye concentrations with adsorbent particle sizes varying in the range 106-300 µm. The results revealed the potential of palm-bunch particles as low-cost adsorbents. The uptake of the basic dye was higher at smaller adsorbent particle sizes. The adsorption isotherm followed both the Langmuir and Freundlich models. Values of the separation factor, R, indicate favourable adsorption for the basic dye/palm-fruit bunch particle system, i.e., 0 < R < 1 and n > 1.

Keywords: Natural Adsorbents, Color Removal, Hardwood

Gupta, G.S. and Shukla, S.P. (1996), An inexpensive adsorption technique for the treatment of carpet effluents by low cost materials. *Adsorption Science & Technology*, **13** (1), 15-26.

Full Text: 1996\Ads Sci Tec13, 15.pdf

Abstract: The application of adsorption techniques for the treatment of carpet effluents containing mainly Metomega Chrome Orange GL (MCO) using various low-cost materials, i.e. coal, fly ash, china clay and wollastonite, has been tested. In all cases, low initial dye concentration, low temperature and low pH favour the removal process. The maximum uptake of the dye by these materials has been determined at 30°C and a pH of 4.5. The effect of pH on the removal of the said dye has been explained in terms of surface hydroxylation and complexation. Various empirical models have been developed in an attempt to correlate the percentage uptake of dye with the parameters investigated. Dynamic modelling of the dye uptake has been undertaken and found to follow first-order kinetics. The rate constants were determined during the adsorption of the dye under the optimum conditions. Coefficients for mass transfer and intraparticle diffusion were also evaluated in order to explain the mechanism. Langmuir’s isotherm was found to be valid. Significant desorption of the dye from the surface of the adsorbents was noted at pH 12.0.

Keywords: Aqueous-Solutions, Chrome Dye, Fly-Ash, Removal, Color, Adsorbents, Silica, Coal

Qadeer, R., Hanif, I. and Hanif, J. (1996), Effect of different cations on the adsorption of Dy3+, Gd3+, Eu3+ and Sm3+ ions on activated charcoal from aqueous solutions. *Adsorption Science & Technology*, **13** (1), 27-29.

Full Text: 1996\Ads Sci Tec13, 27.pdf

Abstract: The effect of different cations on the adsorption of Dy3+, Gd3+, Eu3+ and Sm3+ ions on activated charcoal from aqueous solutions (pH = 4.0) has been studied at room temperature (295±1 K). Their effect on the adsorption of the metal ions has been correlated with the charge density (Z/r) of the cations. It was observed that cations with a larger Z/r value reduced the adsorption of metal ions more than cations with smaller Z/r values. It was also observed that the ease of adsorption of the metal ions followed the sequence: Dy3+ > Gd3+ > Eu3+ > Sm3+. Such data are important in relation to the recovery of metal ions from solution.

Keywords: Uranium

? Rauf, M.A., Iqbal, M.J., Ellahi, I. and Hasany, S.M. (1996), Kinetic and thermodynamic aspects of ytterbium adsorption on sand. *Adsorption Science & Technology*, **13** (2), 97-104.

Full Text: 1996\Ads Sci Tec13, 97.pdf

Abstract: The kinetic and thermodynamic parameters for the adsorption of ytterbium on sand samples from dilute acidic solution are presented. The sorption equilibrium constant, K-c, has been calculated at different temperatures between 18 and 37°C. The sorption data fitted the Freundlich and Dubinin-Radushkevich (D-R) models well. Thermodynamic calculations showed that the sorption of ytterbium on sand was endothermic in nature.

Keywords: Manganese-Dioxide, Acid-Solutions

Youssef, A.M., El-Wakil, A.M., El-Sharkawy, E.A., Farag, A.B. and Tollan, K. (1996), Adsorption of heavy metals on coal-based activated carbons. *Adsorption Science & Technology*, **13** (2), 115-125.

Full Text: 1996\Ads Sci Tec13, 115.pdf

Abstract: Zinc chloride-activated and steam-activated carbons were prepared from Maghara coal (Sinai, Egypt). The surface properties of these carbons were determined from nitrogen adsorption isotherm studies at 77 K and of carbon dioxide at 298 K. The adsorption of Methylene Blue from aqueous solution at 308 K was also investigated. The removal of heavy metals (Hg2+, Cd2+ and Pb2+) from aqueous solution was investigated at pH < 7.0 and at 308 K. The prepared activated carbons exhibited high adsorption capacities for Methylene Blue. The maximum capacity amounted to 83 mgdye per g of carbon, which is equivalent to a surface area of 500 m2/g. The capacity for the removal of heavy metals from their aqueous solutions depends on the pH and the extent of activation, i.e., on the amount of zinc chloride used for chemical activation or on the percentage burn-off during physical activation with steam.

Khalil, L.B. (1996), Adsorption characteristics of activated carbon obtained from rice husks by treatment with phosphoric acid. *Adsorption Science & Technology*, **13** (5), 317-325.

Full Text: 1996\Ads Sci Tec13, 317.pdf

Abstract: Ground rice husks were impregnated with phosphoric acid (30-70 wt.%) followed by carbonization at 673 or 773 K. Analysis of the nitrogen adsorption isotherms was achieved by applying the BET, DR, t- and alpha (s)-methods so as to assess the contribution of micropores and mesopores in the products. The washed products showed reasonable surface areas with dimensions in the micropore range. Adsorption of Methylene Blue from aqueous solution indicated high affinity and high dye removal capacity. Low iodine numbers and Methylene Blue values were ascribed to the high ash content extending up to 50% of the activated carbon. Pre-impregnation with 50% H3PO4 and carbonization at 400°C proved to be most effective in producing an activated carbon with the highest adsorption capacity from the gas or solution.

Keywords: Isotherms, Reactor, Plots

Magdy, Y.H. (1996), The adsorption of mixed dyes (acidic and basic) on to hardwood in a fixed bed. *Adsorption Science & Technology*, **13** (5), 367-375.

Full Text: 1996\Ads Sci Tec13, 367.pdf

Abstract: The adsorption of mixed dyes, Acid Blue and Basic Red, on to hardwood sawdust has been studied using the fixed bed technique. The influence of various parameters such as bed depth, solution flow rate and dye concentration were studied. The modified bed depth service time (BDST) model has been used to analyze the experimental data. In addition the empty bed residence time (EBRT) technique has been applied to optimize the adsorption process variables for either single or multi-component dyes.

Keywords: Natural Adsorbents, Color Removal, Kinetics, Systems

Hussain, S.T. (1996), Carbon monoxide adsorption studies on an Ru: Mn bimetal lic alloy system for the determination of active metalsites. *Adsorption Science & Technology*, **13** (6), 489-493.

Full Text: 1996\Ads Sci Tec13, 489.pdf

Abstract: A supported ruthenium: manganese bimetal lic alloy system dispersed on a high surface area alumina support was prepared by the co-impregnation method. The adsorption of CO at atmospheric pressure was carried out in order to determine the number of active metalsites present. The data indicate that manganese was present as a covering layer on the surface of the ruthenium. With increasing manganese loading decreasing adsorption of CO was observed, indicating that the presence of manganese masked the active ruthenium sites responsible for CO adsorption. NO CO adsorption occurred on isolated manganese sites. The data were interpreted in terms of the geometric and possible electronic effects caused by the addition of manganese.

? Hudek, P., Bobok, D., Smieskova, A. and Zidek, Z. (1996), Sorption and diffusion properties of H- and modified forms of ZSM-5 zeolites. *Adsorption Science & Technology*, **13** (6), 495-508.

Full Text: 1996\Ads Sci Tec13, 495.pdf

Abstract: The sorption properties of samples of H-ZSM-5 zeolite and their forms modified with P, B and Mg were determined by the physical adsorption of nitrogen and evaluated by BET isotherm and t-plot methods. The diffusivities of the samples were measured using a new flow gravimetric method involving the sorption of p- and o-xylenes. The BET specific surface area decreased from 358 m2/g to 35-90 m2/g mainly because of a decrease in micropore volume as determined by the t-plot method. The rate of sorption of p-xylene on all the samples investigated followed Fick’s second law of diffusion, leading to an effective diffusivity of ca. 1.7×10-11 m2/s, irrespective of whether the H-form or the modified forms were investigated. The sorption isotherms for o-xylene showed some unusual steps. Values for the effective diffusivities decreased from 2.6×10-12 m2/s for the H-form to 2.0-2.3×10-12 m2/s for the modified forms. The equilibrium concentration of o-xylene at P/P0 = 0.1 was only 0.38-0.68 mol/unit cell, while that of p-xylene was 4.40-5.98 mol/unit cell.

Keywords: Adsorption, Benzene, Concentration, Crystals, Diffusion, Effective Diffusivities, Equilibrium, Flow, Isotherm, Isotherms, Law, Nitrogen, Physical Adsorption, Properties, Sorption, Sorption Isotherms, Specific Surface Area, Surface Area, Toluene, Transport, Xylene, Zeolite

Qadeer, R. (1996), Adsorption of cerium ions on activated charcoal. *Adsorption Science & Technology*, **13** (6), 519-525.

Full Text: 1996\Ads Sci Tec13, 519.pdf

Abstract: Adsorption studies of cerium ions on activated charcoal were carried out as a function of pH at room temperature. The studies revealed that the maximum adsorption of cerium ions occurs at pH 4. An adsorption mechanism has been discussed in terms of the hydrolyzed cerium ion species formed in solution at different pH values. The data fit the Langmuir and Dubinin-Radushkevich isotherm equations and their corresponding constants were calculated.

Alemany, L.J., Jiménez, M.A., Larrubia, M.A., Delgado, F. and Blasco, J.M. (1996), Removal of phenol from aqueous solution by adsorption on to coal fly ash. *Adsorption Science & Technology*, **13** (6), 527-536.

Full Text: 1996\Ads Sci Tec13, 527.pdf

Abstract: The present work examines the possible use of fly ash, a byproduct of coal power stations, as a means of removing phenol from water, or equivalently, of restricting its movement in solid wastes or soil. Equilibrium experiments were performed to evaluate the removal efficiency of fly ash. The adsorption experiments were undertaken using fly ash treated at three different pH levels and with three different temperatures. The results indicate that although phenol can be removed from water, this depends markedly on the temperature and pH value of the treatment solution employed.

Keywords: Trace-Elements, Pollutants, Sediments, Sorption

? Czepirski, L., KomorowskaCzepirska, E. and Cacciola, G. (1996), Adsorption equilibria and kinetics of water vapour on modified chabazite. *Adsorption Science & Technology*, **14** (2), 83-88.

Full Text: 1996\Ads Sci Tec14, 83.pdf

Abstract: Water sorption isotherms on natural chabazite modified with an organic binder are reported. As expected, samples showed type I IUPAC isotherms. The applicability of potential theory and the Dubinin equation was examined. A temperature-independent characteristic curve was obtained by introducing the reduced adsorption potential. This successful correlation gives the possibility of predicting adsorption isotherm points at any temperature and pressure. Kinetic tests were made to establish the temperature and pressure dependence of the diffusivity parameter.

Keywords: Adsorption, Adsorption Isotherm, Correlation, Dependence, Isotherm, Isotherms, Kinetics, Made, Natural, Organic, Predicting, Pressure, Sorption, Sorption Isotherms, Temperature, Water

Chibowski, S. (1996), Investigation of the mechanism of polymer adsorption on a metal oxide water solution interface. *Adsorption Science & Technology*, **14** (3), 179-188.

Full Text: 1996\Ads Sci Tec14, 179.pdf

Abstract: The results of investigations of polymer adsorption in dispersed solid/water solutions of a polymer are presented. Poly (vinyl alcohol) (PVA), polyacrylamide (PAM) and poly (acrylic acid) (PAA) were used as polymers and TiO2, Fe2O3, Al2O3 and polystyrene latex as adsorbents. All measurements were conducted with fractionated commercial polymers. Analysis of the experimental and theoretical data obtained proved that of the three kinds of structures created during macromolecule adsorption, i.e., trains, loops and tails, tails play the main role in determining the thickness of the adsorption layer.

? Shonija, N.K. and Detistova, A.L. (1997), Adsorption properties of native and modified forms of the clay mineral saponite. *Adsorption Science & Technology*, **15** (1), 39-46.

Full Text: 1997\Ads Sci Tec15, 39.pdf

Abstract: Studies have been made of the surface characteristics of the schistose silicate, saponite, and samples obtained by acid modification of the mineral. The structural characteristics of the samples were determined via the complete adsorption/desorption isotherms of benzene. It was shown that acid modification of saponite generates materials with improved adsorption-structural characteristics and high adsorption capacity towards small nonpolar molecules. By mans of the ionogenic adsorption of dye molecules, electro-osmotic data and DTA, it has been shown that saponite could be used for the creation of effective ion-exchange materials.

Keywords: Adsorption, Benzene, Capacity, Clay, Creation, Dta, Dye, Isotherms, Made, Materials, Mineral, Properties, Silicate, Surface Characteristics

McKay, G., El Geundi, M. and Nassar, M.M. (1997), Equilibrium studies for the adsorption of dyes on bagasse pith. *Adsorption Science & Technology*, **15** (4), 251-270.

Full Text: 1997\Ads Sci Tec15, 251.pdf

Abstract: The adsorption of four dyes on to bagasse pith has been studied. The equilibrium isotherms have been measured and analyzed using the Langmuir, Freundlich and Jossens equations and the experimental data have been compared with the theoretically predicted data. The equilibrium saturation adsorption capacities were 21.7, 22.9, 155.4 and 76.6 mg/g for Telon Blue ANL (Acid Blue 25, CI62055), Erionyl Red RS (Acid Red 114, CI23635), Astrazone Blue FRR (Basic Blue 69) and Maxilon Red BL-N (Basic Red 22, CI11055), respectively. Isotherms were measured at different temperatures and from the data the enthalpies of adsorption were determined to be 11.5, 11.8, 10.3 and 10.7 kJ/mol for Acid Blue 25, Acid Red 114, Basic Blue 60 and Basic Red 22, respectively.

Keywords: Natural Adsorbents, Aqueous-Solutions, Activated Carbon, Acid Dye, Removal, Hardwood, Peat

Girgis, B.S., Abdel Kader, A. and Aly, A.N.H. (1997), Development of porosity in bone char during decolorization of sugar syrup. *Adsorption Science & Technology*, **15** (4), 277-287.

Full Text: 1997\Ads Sci Tec15, 277.pdf

Abstract: Fresh service bone char was subjected to four column decolourization cycles composed of use for 4 d and re-activation. The adsorption of N2 by the used and regenerated chars, and the adsorption of Methylene Blue and iodine by the activated chars, was determined. Specific surface areas of ca. 90 m2/g were recorded up to the end of the third cycle. which then decreased thereafter with appreciable pore widening. Pore size distributions for the fresh and activated char indicated two peaks corresponding to micropores (13-15 Angstrom) and mesopores (35-40 Angstrom). Subsequent to the end of decolourization, the second peak diminished due to deposition of the adsorbed colouring matter inside the mesopores. After regeneration. the mesopores appear again. Use of the Freundlith and Langmuir equations allowed the adsorption data for Methylene Blue to be linearized properly. The monolayer capacity of the dye appears to be independent of the age of the char. Iodine numbers were generally comparable to the BET surface areas as measured by nitrogen adsorption.

Keywords: Activated Carbons, Adsorption, Bone Char, Dye, Isotherms, Langmuir, Methylene Blue, Plots, Regeneration

Khokhlova, T.D., Nikitin, Y.S. and Detistova, A.L. (1997), Modification of silicas and their investigation by dye adsorption. *Adsorption Science & Technology*, **15** (5), 333-340.

Full Text: 1997\Ads Sci Tec15, 333.pdf

Abstract: Various silicas (silica gel, silochrome, alumosilica, Aerosil and quartz) were modified by dehydroxylation, calcium hydroxide, aluminium chloride and organosilanes with hydrophobic and aminopropyl groups. The surface characteristics of the modified materials were evaluated by means of basic and acid dye adsorption from aqueous solution. The degree of modification, the hydrolytic stability of the organosilyl silicas and the rehydroxylation rate of the dehydroxylated silicas were determined via the kinetics of dye adsorption and their respective isotherms.

Keywords: Adsorption, Calcium, Chloride, Dehydroxylation, Dye, Isotherms, Kinetics, Materials, Silica, Stability, Surface Characteristics

Qadeer, R. and Saleem, M. (1997), Adsorption of UO22+ ions on activated charcoal: pH effect. *Adsorption Science & Technology*, **15** (5), 373-376.

Full Text: 1997\Ads Sci Tec15, 373.pdf

Abstract: The adsorption of UO22+ ions on activated charcoal was studied as a function of pH. The adsorption mechanism of UO22+ ions has been discussed in terms of hydrolyzed species formed in aqueous solution at different pH values.

Keywords: Aqueous-Solutions, Uranium

? Hashim, M.A., Chu, K.H., Phang, S.M. and Ong, G.S. (1997), Adsorption equilibria of cadmium on algal biomass. *Adsorption Science & Technology*, **15** (6), 445-453.

Full Text: 1997\Ads Sci Tec15, 445.pdf

Abstract: Adsorption equilibria of cadmium on the non-living algal biomass of Chlorella vulgaris were studied using batch stinted-tank methods. The adsorption process was rapid, achieving equilibrium in a few minutes. Environmental factors such as pH, biomass dosage and buffer concentration had a considerable influence on the equilibrium isotherms. The adsorption capacity of the biomass increased with increasing pH. This behaviour was attributed to decreased protonation of the binding sites and decreased competition for binding between the cadmium ions and protons with increasing pH. The equilibrium data measured at different pH values were consistent with the influence of pH on the zeta potentials of the biomass, indicating that the dominant binding mechanism is likely to involve electrical attractions.

Keywords: *Chlorella-Vulgaris*, Whole Cells, Binding, Biosorption, Copper, Walls, Fusca

Daifullah, A.E., El-Reefy, S. and Gad, H. (1997), Adsorption of p-nitrophenol on Inshas incinerator ash and on the pyrolysis residue of animal bones. *Adsorption Science & Technology*, **15** (7), 485-496.

Full Text: 1997\Ads Sci Tec15, 485.pdf

Abstract: The potential use of (a) Inshas incinerator ash and (b) the pyrolysis residue of animal bones for removing p-nitrophenol (PNP) from aqueous solutions by adsorption has been investigated. The experimental results have been fitted to the Langmuir and Freundlich isotherms. The maximum adsorptive capacity of Inshas incinerator ash was found to be 116 mg/g and of the pyrolysis residue of animal bones to be 111 mg/g. The extent of removal was dependent on the pH and the temperature of the solution and on the type and mass of adsorbent employed. Desorption results indicated that not more than 15% of the adsorbed amounts of PNP are released from the loaded matrix into the bulk solution. The activation energy of the process was 5.67 kcal/mol which shows that the rate-controlling step is intraparticle diffusion.

Keywords: Activated Carbons, Removal

Mostafa, M.R. (1997), Adsorption of mercury, lead and cadmium ions on modified activated carbons. *Adsorption Science & Technology*, **15** (8), 551-557.

Full Text: 1997\Ads Sci Tec15, 551.pdf

Abstract: Steam-activated and zinc chloride-activated carbons were prepared from rice husks. These carbons were modified by treatment with different concentrations of sulphuric acid. The adsorption of Hg2+, Pb2+ and Cd2+ ions from aqueous solution at 298 K on to these carbons has been investigated. The effect of pH on the adsorption capacity has also been studied. The adsorption isotherms obtained were of the Langmuir type, the application of the Langmuir equation allowing the determination of the adsorption capacities. The chemistry of the carbon surface is a prominent factor which determines the removal capacity for these metal ions. In contrast, the extent of the surface is not a controlling factor in this regard.

Keywords: 298 K, 298-K, Adsorption, Adsorption Isotherms, Ammonia, Aqueous-Solutions, Cadmium, Capacity, Carbon, Determination, Isotherms, Lead, Mercury, pH, Removal, Rice, Sulphuric Acid, Treatment, Zinc

Abdel Raouf, M.W. and Daifullah, A.A.M. (1997), Potential use of bone charcoal in the removal of antimony and europium radioisotopes from radioactive wastes. *Adsorption Science & Technology*, **15** (8), 559-569.

Full Text: 1997\Ads Sci Tec15, 559.pdf

Abstract: Bone charcoal has been shown to be a good sorbent for Sb-124(III) and Sb-124(V) from liquid organic radioactive wastes and for the retention of Eu-152(III) from aqueous wastes. Physical sorption was suggested to be the main mechanism operating for radioantimony isotopes with appreciably higher fixation on the sorbent when loaded from the liquid organic radwaste. In contrast, chemisorption was postulated as the main operating mechanism for Eu-152(III) with a higher and irreversible fixation on bone charcoal from a neutral aqueous medium.

Nassar, M.M. (1997), The kinetics of basic dye removal using palm-fruit bunch. *Adsorption Science & Technology*, **15** (8), 609-617.

Full Text: 1997\Ads Sci Tec15, 609.pdf

Abstract: Equilibrium and kinetic studies were carried out during the adsorption of Basic Yellow dye on palm-fruit bunch adsorbent. The adsorbent is a cheap, abundant waste in tropical countries and has a monolayer equilibrium capacity of 320 mgdye/ (g palm-fruit bunch). The effect of particle size, contact time and temperature were studied. The equilibrium data were analyzed using the Langmuir, Freundlich and Redlich-Peterson adsorption models. The applicability of the Lagergren kinetic model has also been investigated. The adsorption isotherm rate constants demonstrate that palm-fruit bunch is a favourable adsorbent. The removal process follows first-order kinetics. The temperature dependence indicates the endothermic nature of the process.

Keywords: Adsorption, Effluents

? McKay, G., El-Geundi, M. and Nassar, M.M. (1997), Adsorption model for the removal of acid dyes from effluent by bagasse pith using a simplified isotherm. *Adsorption Science & Technology*, **15** (10), 737-??.

Full Text: 1997\Ads Sci Tec15, 737.pdf

Abstract: The adsorption of two acid dyes, viz. Acid Red AR114 and Acid Blue AB25, on to bagasse pith, a waste material from the sugar cane industry has been studied. Equilibrium isotherms and agitated batch contact time studies have been carried out. A mass-transfer model has been used based on a Langmuir-type isotherm at maximum saturation. This simple or pseudo-irreversible isotherm and the assumption of pore diffusion enables a pore diffusion mass-transfer model to theoretically predict the experimental concentration decay curves very rapidly.

Keywords: Activated Carbon Columns, Water-Purification, Binary Adsorption, Aqueous-Solutions, Batch Tests, Scale-up, Diffusion, Gold, Pore

El-Geundi, M.S. (1997), Adsorbents for industrial pollution control. *Adsorption Science & Technology*, **15** (10), 777-787.

Full Text: 1997\Ads Sci Tec15, 777.pdf

Abstract: Adsorbent materials used for treating industrial pollutants are reviewed. The article consists of two parts. The first part considers new trends in traditional adsorbents such as activated carbons and zeolites. New low-cost adsorbents such as waste materials and clay minerals are discussed in the second part. It has been reported that activated carbons can be obtained from agricultural by-products such as shells and stones of various fruit by a simple single-stage method. This method differs from the traditional processes for the production of activated carbons. On the other hand, natural zeolites have been used as low-cost adsorbents in industrial pollution control. The extent of their application is not only related to their low cost, but also to the improved properties and performance characteristics which they possess. Recently, a variety of agricultural and industrial waste materials and clay minerals have been evaluated as new adsorbents with an excellent potential for the removal of different pollutants from wastewater. The new low-cost adsorbents obtained were found to have large adsorption capacities and good mechanical properties.

Keywords: External Mass-Transfer, Agricultural By-Products, Impregnated Fly-Ash, Aqueous-Solutions, Activated Carbon, Bagasse Pith, Waste-Water, Heavy-Metals, Textile Effluents, Transport Model

Akhtar, S. and Qadeer, R. (1997), Active carbon as an adsorbent for lead ions. *Adsorption Science & Technology*, **15** (10), 815-824.

Full Text: 1997\Ads Sci Tec15, 815.pdf

Abstract: A commercial active carbon has been tested as an adsorbent for the removal of lead ions from aqueous solutions. Optimum conditions for maximum adsorption in terms of shaking time, lead ion concentration, temperature and concentration of different acids were established. The results obtained reveal that the adsorption of lead ions on active carbon is athermic (Delta H = 0) in nature and follows first-order kinetics. The first-order rate constant was evaluated as 0.049 min-1 and the intraparticle diffusion rate as 3.07×10-4(g/g min(1/2)). The data also obey the Freundlich, Langmuir and Dubinin-Radushkevich (D-R) isotherm equations over the concentration range studied. The magnitude of the adsorption energy, 7.61 kJ/mol, calculated from the beta-constant of the D-R equation lies in the energy range for physical adsorption which is attributed to weak bonding between the lead ions and the active carbon.

Keywords: Aqueous-Solutions, Adsorption, Kinetics, Charcoal, Removal

Dahal, M.P., Lawrance, G.A. and Maeder, M. (1998), Kinetics of heavy metal ion adsorption on to, and proton release from, electrolytic manganese dioxide. *Adsorption Science & Technology*, **16** (1), 39-50.

Full Text: 1998\Ads Sci Tec16, 39.pdf

Abstract: The kinetics of adsorption of lead(II), as well as of copper(II), zinc(II) and thallium(I), on commercial electrolytic manganese dioxide (EMD) powder of different size fractions has been followed by a pH-stat method involving the computer-controlled neutralisation of released protons from the EMD at a fixed pH with hydroxide ion. Base uptake versus time profiles in all cases indicated a rapid initial change followed by a slower process. These can be interpreted in terms of either a solution kinetic model or an adsorption kinetic model. In the former analysis, the adsorption-time profile can be interpreted in terms of two, or at most three, exponentials. The contribution of the first fast step increases with decreasing average particle size (or increasing surface area), consistent with its interpretation as being associated with the replacement of accessible protons on the exposed surface of the EMD by metal ions. The slower rate processes can be considered to be associated with adsorption in less accessible clefts or pores in the structure. In the diffusion model, the experimental data were fitted to the equation of diffusion in a sphere, fitting again requiring a first initial step followed by a slower step, with one diffusion coefficient having typically an upper limit of 10-9 and the other a lower limit of 10-11 cm2/s. For the complete reaction, the moles of protons released per mole of metal ion adsorbed were also measured and found to be relatively insensitive with respect to pH, metal ion concentration, electrolyte concentration and EMD size fraction. At pH 4, the H+: Mn+ ratio ranged from 1.4 to 2.1 (±0.1) for divalent transition metal ions, consistent with dominant chelation of the divalent metal ion to two adjacent oxygen sites on the surface; for thallium(I), a low ratio (0.5) indicated a different mode of surface attachment.

McKay, G., Vong, B. and Porter, J.F. (1998), Isotherm studies for the sorption of metal ions on to peat. *Adsorption Science & Technology*, **16** (1), 51-66.

Full Text: 1998\Ads Sci Tec16, 51.pdf

Abstract: The adsorption of five single-component metal ions, namely, copper, cadmium, cobalt, nickel and zinc, on to pear has been studied. Equilibrium isotherms were measured and analysed using three methods: Langmuir, Freundlich and Redlich-Peterson. Overall the Langmuir equation gave the best fit based on a linear correlation coefficient. The Langmuir equation was used to determine the monolayer saturation capacity for each of the metals on peat. These sorption capacities are: cadmium, 99.47 µmol/g (11.18 mg/g) peat; cobalt, 446.93 µmol/g (26.34 mg/g) peat; copper, 198.31 µmol/g (12.60 mg/g) peat; nickel, 113.24 µmol/g (6.65 mg/g) peat; and zinc, 141.93 µmol/g (9.28 mg/g) peat.

Keywords: Sphagnum Moss Peat, Activated Carbon, Aqueous-Solutions, Adsorption, Removal, Copper, Batch, Thermodynamics, Dyestuffs, Kinetics

? Tsai, W.T., Chang, C.Y. and Ho, C.Y. (1998), Adsorption equilibrium of 1,1-dichloro-1-fluoroethane (HCFC-141b) on a hydrophobic zeolite. *Adsorption Science & Technology*, **16** (2), 67-75.

Full Text: 1998\Ads Sci Tec16, 67.pdf

Abstract: of the major replacements for chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) are now accepted as being prime contributors to stratospheric ozone depletion. As a consequence, the development of adsorbents capable of adsorbing and recovering specific HCFCs has received great attention.

This paper describes an investigation of the adsorption equilibrium of 1,1-dichloro-1-fluoroethane (HCFC-141b) vapour on a commercial hydrophobic zeolite. The corresponding Henry, Freundlich and Dubinin-Radushkevich (D-R) equilibrium isotherms have been determined and found to correlate well with the experimental data. Based on the Henry adsorption isotherms obtained at 283, 303 and 313 K, thermodynamic properties such as the enthalpy, free energy and entropy of adsorption have been computed for the adsorption of HCFC-141b vapour on the adsorbent.

The results obtained could be useful in the application of HCFC adsorption on the hydrophobic zeolite studied.

Keywords: Activated Carbon, CFC Replacements, Chlorofluorocarbons

El-Reefy, S., Daifullah, A.E. and Gad, H. (1998), Adsorption of typical organic pollutants from wastewater using Inshas incinerator ash. *Adsorption Science & Technology*, **16** (2), 87-99.

Full Text: 1998\Ads Sci Tec16, 87.pdf

Abstract: The extent to which the full surface area of Inshas incinerator ash(IIA) is utilized for the adsorption of a solute from aqueous solution in single-component systems and in a two-component system is described. Adsorption isotherms for phenol (P), m-cresol (m-Cr), p-cresol (p-Cr), 4-nitrophenol (4NP) and 2-nitrophenol (2NP) on to IIA have been determined. The data conform to the Langmuir and Freundlich adsorption models. For the two-component system of phenol and m-cresol in water, it was clear that the driving force for competitive adsorption was mainly the enthalpy change, Delta H. It was also found that such competitive adsorption generally results in the mutual inhibition of the adsorptive capacity of each solute. The feasibility of using IIA for the removal of the aforementioned pollutants from water is discussed.

Keywords: Activated Carbons, Phenols, Oxygen

Fu, H.X., Lu, G.X. and Li, S.B. (1998), Adsorption of chromium(VI) ions on to TiO2 from aqueous solution. *Adsorption Science & Technology*, **16** (2), 117-126.

Full Text: 1998\Ads Sci Tec16, 117.pdf

Abstract: The study of the adsorption of the Cr-VI ion on to TiO2 not only provides information on the removal of heavy metal ions from polluted aqueous solutions, but is also useful for further investigation of the photocatalytic decontamination of the Cr-VI ion or of Cr-VI-organic species which co-exist as pollutants with TiO2 when the latter is used as a stable and highly efficient photocatalyst. It has been found that dark adsorption of the Cr-VI ion on to TiO2 is mainly dependent on the acidity of the system and the initial concentration of the Cr-VI ion, As the pH of the system increases, so the extent of adsorption of the Cr-VI ion decreases. The greatest adsorption was obtained with an initial Cr-VI ion concentration of ca. 300 µmol/l. The presence of phosphate or acetate ions in the system dramatically decreases the adsorption efficiency of the Cr-VI ion, In contrast, the addition of formic acid leads to a limited increase in the extent of Cr-VI ion adsorption. Other organic ions and organic compounds examined showed no interference in Cr-VI ion adsorption. FT-IR spectroscopic methods were used for the characterization of Cr-VI ion adsorption on to TiO2.

Keywords: Surface

Tahir, H., Saleem, M., Afzal, M., Ahmad, H., Hussain, S.T. and Afzal, J. (1998), Estimation and removal of chromium ions from tannery wastes using zeolite-3A. *Adsorption Science & Technology*, **16** (3), 153-161.

Full Text: 1998\Ads Sci Tec16, 153.pdf

Abstract: The concentration of potentially toxic chromium metal ions in sediments and liquid waste samples from selected tanneries was measured by atomic absorption spectrophotometry after digestion with nitric acid. The data obtained revealed the presence of elevated levels of chromium metal ions in waste samples relative to the NEQS (National Environmental Quality Standards) requirements. A new process entitled IERECHROM (Ion Exchange REmoval of CHROMium) has been developed for the removal and separation of chromium ions from sediments using zeolite-3A.The factors affecting chromium ion removal include exchanger concentration, pH, shaking time and temperature. The applicability of the Freundlich, Dubinin-Radushkevich and virial isotherm equations to the system has been examined. The thermodynamic parameters Delta H-0, Delta G(0) and Delta S-0 were calculated using the virial isotherm expression. The results suggest that natural aluminosilicates such as zeolite-3A can be utilised as low-cost ion-exchange and sorbent materials because of their selectivities for the removal of chromium ions and various other heavy metals.

Ho, Y.S. and McKay, G. (1998), Kinetic model for lead(II) sorption on to peat. *Adsorption Science & Technology*, **16** (4), 243-255.

Full Text: [A\Ads Sci Tec16, 243.pdf](A/Ads%20Sci%20Tec16,%20243.pdf)

Abstract: The kinetics of lead sorption on to peat have been investigated. The batch sorption model, based on the assumption of a pseudo-second order mechanism, has been developed to predict the rate constant of sorption, the equilibrium capacity and initial sorption rate with the effect of initial lead(II) concentration, peat particle size and temperature. An equilibrium capacity of sorption has been evaluated with the pseudo-second order rate equation. In addition, an activation energy of sorption has also been determined based on the pseudo-second order rate constants.

Keywords: Activation, Activation Energy, Adsorbents, Adsorption, Batch, Capacity, Equilibrium, Ions, Kinetic, Kinetic Model, Kinetics, Lead, Lead(II), Mechanism, Model, Particle Size, Peat, Pseudo-Second Order, Pseudo-Second-Order, Rate Constants, Removal, Sorption, Temperature, Waste-Water

? Kats, B.M. and Kutarov, V.V. (1998), A modified BET equation for polylayer adsorption. *Adsorption Science & Technology*, **16** (4), 257-262.

Full Text: 1998\Ads Sci Tec16, 257.pdf

Abstract: A three-parameter equation was obtained in the BET theory framework taking into account the correction suggested by the authors. This equation allows the description of adsorption isotherms in the range of polylayer adsorption as well as in the range of cluster formation. This equation was demonstrated as true for a number of adsorption systems in the relative pressure range 0.05 less than or equal to x less than or equal to 0.97 for nitrogen, benzene and water vapour.

Keywords: Adsorption, Adsorption Isotherms, Benzene, Cluster, Isotherms, Nitrogen, Pressure, Range, Water

Khalil, L.B. and Girgis, B.S. (1998), Column removal of some dyestuffs by activated carbons derived from apricot stone shells. *Adsorption Science & Technology*, **16** (5), 405-414.

Full Text: 1998\Ads Sci Tec16, 405.pdf

Abstract: Activated carbons (ACs) were prepared from apricot stone shells impregnated with H3PO4, followed by carbonization at 400-500°C. Fixed-bed removal of two dyestuffs, i.e. Direct Red 99 (DR) and Reactive Orange 11 (RO) was followed at constant bed height and flow rate. Several column characteristics were evaluated from the breakthrough curves obtained including: the volume and loading at breakpoint, the height of the mass transfer zone, the bed service time, the time and loading at exhaustion, and the fractional bed loadings at various stages. The bed performance with RO was better than for DR. which was ascribed to a screening effect towards the larger DR molecules and to enhanced adsorption arising from the polyhalogenated nature of the RO molecule. The removal of colour was favoured as the porosity of the AC developed, being particularly related to its mesoporosity and total pore volume.

Keywords: Acid Dye, Adsorption, Aqueous-Solutions, Breakthrough, Breakthrough Curves, Color Removal, Dye Wastewaters, Dyestuffs, Equilibrium, Flow Rate, Natural Adsorbents, Removal

Zarraa, M.A. (1998), Adsorption equilibria of single-component and multi-component metal ions onto scrap rubber. *Adsorption Science & Technology*, **16** (6), 493-502.

Full Text: 1998\Ads Sci Tec16, 493.pdf

Abstract: The ability of scrap rubber to adsorb the three metal ions, copper, cadmium and zinc, in single-component and multi-component mixtures in aqueous solutions has been studied. A comparison has been made between the single-component saturation uptake and the multi-component uptakes. The experimental results were fitted to the Langmuir, Freundlich and Redlich-Peterson isotherms. The correlation coefficients obtained from plotting these isotherms gave a measure of the conformity of the data to a linear trend and corresponded to a perfect fit. The isotherms indicated a competitive uptake, with copper being preferentially adsorbed by scrap rubber in multi-component solutions. The capacity of scrap rubber for the single-component metals was in the order: Cd > Cu > Zn. On the other hand, the order of preference of scrap rubber for metals in multi-component mixtures was: Cu> Cd > Zn.

McKay, G., Yee, T.F., Nassar, M.M. and Magdy, Y. (1998), Fixed-bed adsorption of dyes on bagasse pith. *Adsorption Science & Technology*, **16** (8), 623-639.

Full Text: 1998\Ads Sci Tec16, 623.pdf

Abstract: The adsorption of a number of basic dyes on to bagasse pith has been studied using fixed-bed adsorption. Pith is a waste material produced from the crushed cane (depithing operation) during the extraction of sugar from sugar cane. The results show that pith can adsorb basic dyes and breakthrough curves are reported at various heights in the fixed beds. The bed depth service time model has been used to assess the results.

Keywords: Aqueous-Solutions, Removal, Equilibrium, Effluent, Adsorbents, Dyestuffs, Isotherm, Silica, Model

Khalid, N., Ahmad, S., Toheed, A. and Ahmed, J. (1998), Immobilization of arsenic on rice husk. *Adsorption Science & Technology*, **16** (8), 655-666.

Full Text: 1998\Ads Sci Tec16, 655.pdf

Abstract: The adsorption potential of rice husk was investigated for arsenic ions from aqueous solution as a function of the appropriate electrolyte, contact time, concentrations of the adsorbent and adsorbate, effect of diverse ions and temperature. A radiotracer technique has been used to determine the distribution of arsenic employing a batch method. Maximum adsorption was observed at 0.01 mol/l acid solution (HNO3, HCl, H2SO4 and HClO4) using 1.0 g of adsorbent for 5.97×10-3 mol/l arsenic concentration and an equilibration time of 5 min. Studies showed that adsorption decreased with an increase in the concentration of all the acids studied. The adsorption data conformed to the Freundlich isotherm over the concentration range from 8.69×10-5 to 1.73×10-3 mol/l arsenic. Characteristic Freundlich constants, i.e. l/n = 0.83±0.06 and K = 4.43±0.16 mmol/g were computed for the sorption system. The uptake of arsenic increased with increasing temperature. Thermodynamic quantities, i.e. Delta G(0), Delta S-0 and Delta H-0, were also calculated for the system. The sorption process was found to be endothermic.

Keywords: Neutron-Activation Analysis, Atomic-Absorption Spectrometry, Trace-Elements, Emission-Spectrometry, Pre-Concentration, Natural-Waters, Hydride Generation, Silica-Gel, Preconcentration, Separation

? Nasuto, R. (1998), The adsorption of a modifier from the mobile phase on to the column packing surface and its effect on retention in gas chromatography (GC). *Adsorption Science & Technology*, **16** (10), 857-866.

Full Text: 1998\Ads Sci Tec16, 857.pdf

Abstract: The adsorption of a modifier (methanol) from the mobile phase on to a column packing surface and its influence on the retention of aliphatic hydrocarbons (C-6-C-12) and of benzene and some of its derivatives has been examined. Prior to such adsorption, the methanol adsorption isotherm was measured chromatographically by frontal analysis methods. A reduced retention of the compounds examined was observed as the concentration of adsorbed methanol increased. In addition, it was established that increasing concentrations of adsorbed methanol on the column packing surface led to a decrease in the selectivity of the latter.

Keywords: Adsorption, Adsorption Isotherm, Analysis, Benzene, Carrier Gas, Chromatography, Concentration, Formic-Acid, Frontal, Gas Chromatography, Hydrocarbons, Isotherm, Methanol, Retention, Selectivity, Solid Chromatography, Steam

Ho, Y.S. and McKay, G. (1999), A multi-stage batch sorption design with experimental data. *Adsorption Science & Technology*, **17** (4), 233-243.

Full Text: [A\Ads Sci Tec17, 233.pdf](A/Ads%20Sci%20Tec17,%20233.pdf)

Abstract: The sorption of lead ions on to peat in an agitated batch adsorber has been studied. A model has been developed for the design of a two-stage batch adsorber based on pseudo second-order sorption kinetics. The model has been optimised with respect to contact time in order to minimise total contact time to achieve a fixed percentage of metal ion removal.

Keywords: Aqueous-Solutions, Heavy-Metals, Waste-Water, Humic-Acid, Weak-Acid, Removal, Peat, Adsorption, Copper(II), Model

Khattri, S.D. and Singh, M.K. (1999), Colour removal from dye wastewater using sugar cane dust as an adsorbent. *Adsorption Science & Technology*, **17** (4), 269-282.

Full Text: 1999\Ads Sci Tec17, 269.pdf

Abstract: Decolouration of dilute solutions of basic dye stuff was carried out using sugar cane dust as an adsorbent. It was found that low adsorbate concentration, small particle size of the adsorbent, a temperature of 25°C and a pH value of 7.5 for the medium all favour the removal of dye from aqueous solutions. The percentage of dye adsorbed by sugar cane dust decreased from 96.48% to 83.32% and from 90.78% to 78.02% for Malachite Green and Methylene Blue, respectively, when the concentration of the dye was increased from 6 mg/l to 12 mg/l. Similarly, the adsorption of Crystal Violet and of Rhodamine B also decreased with increasing dye concentration in the solutions. The amount of dye (Malachite Green and Rhodamine B) adsorbed decreased from 3.04 mg/g to 2.57 mg/g and from 2.53 mg/g to 2.17 mg/g when the temperature of the, solution was increased from 25°C to 45°C, indicating that the process was exothermic. The values of the adsorption capacity (Q degrees) of Malachite Green and Rhodamine B on the adsorbent varied from 4.87 to 4.08 and from 4.26 to 3.82, respectively, as the temperature increased from 25°C to 45°C. The equilibrium data obey the requirements of the Langmuir adsorption model, demonstrating the formation of a monolayer of dye molecules on the outer surface of the adsorbent. The variation in the extent of removal with pH has been explained on the basis of surface ionisation and complexation. Various thermodynamic parameters (ΔG°, ΔH° and ΔS°) have also been determined in order to explain the results.

Keywords: Natural Adsorbents, Aqueous-Solutions, Adsorption, Cost

Rauf, N., Ikram, M. and Tahir, S.S. (1999), Adsorption studies of Cu-II from aqueous/acidic solutions on to bentonite. *Adsorption Science & Technology*, **17** (5), 431-440.

Full Text: 1999\Ads Sci Tec17, 431.pdf

Abstract: The ability of bentonite to remove Cu-II from aqueous and acidic solutions at different pH values has been studied for different adsorbate concentrations by varying the amount of adsorbent, temperature and shaking time. The maximum (85%) adsorption of Cu-II was achieved from aqueous solution at pH 3.8. The influence of different anions and cations in the 0-1000 µg/ml concentration range on the adsorption of copper under optimized conditions has been examined. A flame atomic absorption spectrometer was used for measuring the copper concentration before and after adsorption. Isotherm analysis of the adsorption data obtained at 25°C, 30°C, 40°C and 50°C showed that the adsorption of copper(II) on bentonite could be described by both the Langmuir and the Freundlich isotherms. Values of Delta H0 and Delta S0 were calculated from the slope and intercept of the In KD versus 1/T plots.

Keywords: Waste-Water, Copper, Behavior, Removal, Zinc

? Leyva-Ramos, R., Zuniga, J.H.S., Barron, J.M. and Coronado, R.M.G. (1999), Adsorption of phenol from aqueous solution on to activated carbon. Effect of solvent, temperature and particle size. *Adsorption Science & Technology*, **17** (7), 533-543.

Full Text: 1999\Ads Sci Tec17, 533.pdf

Abstract: The effects of solvent, particle size and temperature on the adsorption isotherm for phenol on to activated carbon were investigated in this work. The first two effects were studied by determining the adsorption isotherm at 298 K in both aqueous and cyclohexane solutions, and using particle diameters of 0.338, 0.635, 0.940 and 1.494 mm. The last effect was analyzed by measuring the adsorption isotherm at temperatures of 283 K, 298 K and 313 K in both solvents, and using a particle diameter of 0.940 mm. It was found that in the aqueous solution the amount of phenol adsorbed is greater than that in the cyclohexane solution, which was attributed to the fact that phenol has a higher affinity for cyclohexane than for water. Furthermore, the results revealed that in aqueous solution the amount of phenol adsorbed increased when the particle size decreased and was slightly reduced by an increase in the temperature; however, in cyclohexane solution, the amount of phenol adsorbed was independent of particle size and considerably reduced by increasing temperature.

Ishfaq, M.M. and Safdar, M. (1999), A radiochemical study of the kinetics and mechanism of caesium ion adsorption on potassium copper nickel hexacyanoferrate(II). *Adsorption Science & Technology*, **17** (8), 689-701.

Full Text: 1999\Ads Sci Tec17, 689.pdf

Abstract: The adsorption of caesium ions on potassium copper nickel hexacyanoferrate(II) (KCNF) was carried out under optimum conditions to ascertain whether such adsorption occurred via an ion-exchange process. The results show that the adsorption takes place by means of a pure caesium-potassium ion-exchange reaction. Batch kinetic studies of the replacement of potassium ions on KCNF by caesium ions were carried out in aqueous solution at a pH value of 4.0 over the temperature range 293-333 K at a caesium ion concentration of 7.5×10-3 mol/l. From the various thermodynamic quantities calculated, it was deduced that the ion-exchange process was endothermic. Kinetic studies of caesium adsorption on KCNF were carried out as a function of the particle size of KCNF and of the temperature. The data obtained at a caesium ion concentration of 7.5×10-7 mol/l fitted the film diffusion model. Different physical parameters such as the effective diffusion coefficient and the activation energy were calculated. From an Arrhenius plot at a caesium ion concentration of 7.5×10-7 mol/l, the activation energy was evaluated as 19.3 kJ/mol, thereby confirming the film diffusion nature of the process. However, the data obtained at the higher caesium ion concentration of 7.5×103 mol/l could not be interpreted via the particle diffusion model but rather by a fast chemical reaction model. At this concentration, the reaction followed shell progressive reaction kinetics as confirmed by the linear Arrhenius plot obtained. This plot gave an activation energy of 68.5 kJ/mol for the process, thereby confirming the applicability of shell progressive reaction kinetics under these circumstances.

Keywords: Aqueous-Solutions, Cesium, Sorption, Ferrocyanide

Mustafa, S., Naeem, A., Nisa, S.U., Murtaza, S. and Khalid, M. (1999), The mechanism of alkali metal ion sorption by iron(III) phosphate. *Adsorption Science & Technology*, **17** (9), 715-727.

Full Text: 1999\Ads Sci Tec17, 715.pdf

Abstract: Alkali metal ion exchange (Li+, Na+ and K+) on iron(III) phosphate (FePO4) was studied potentiometrically as a function of temperature and metal ion concentration. The uptake behaviour of iron(III) phosphate was inferred from a comparison of the K+ ions sorbed and the loss of H+ ions from the exchanger. FT-IR spectroscopic studies and dissolution studies of FePO4 confirmed the uptake mechanism of alkali metal cations as cation exchange. The potentiometric titration data were employed to evaluate the apparent dissociation constants of iron(III) phosphate which were found to depend on the temperature of the system. The corresponding thermodynamic parameters Delta H-0 and Delta S-0 were also evaluated.

Keywords: Cation-Exchange Properties, Titanium Phosphate, Dissociation, Temperature, Gamma-Al2O3, Charge

? Khalil, L.B. (1999), Porosity characteristics of chars derived from different lignocellulosic materials. *Adsorption Science & Technology*, **17** (9), 729-739.

Full Text: 1999\Ads Sci Tec17, 729.pdf

Abstract: Sixteen agricultural waste products were subjected to pyrolysis at 550°C under a nitrogen atmosphere. The precursors which were treated in this manner were fruit stones and nut shells (peach, apricot and olive stones; date pits, almond, hazel nut and pistacio shells), fibrous materials (sugar cane bagasse, date palm branches and leaves, cotton stalks and wood meal:), corn cobs, rice husks, alkali-washed rice hulls and barbecue charcoal. Low adsorption of nitrogen was observed at 77 K with low values being estimated for the corresponding BET surface areas and total pore volumes. The surface areas as determined from CO, adsorption at 303 K were relatively higher and various micropore parameters were calculated from the Dubinin-Radushkevich equation. Iodine was adsorbed from aqueous solution in amounts higher than the apparent surface areas and Methylene Blue was also taken up in a similar fashion. Such behaviour was attributed to the surface chemical natures of the chars which contribute to the higher uptake from aqueous solution. Generally, microporous products exhibiting a predominant ultramicroporosity were obtained under pyrolysis conditions.

Keywords: Dubinin-Radushkevich Equation, Agricultural By-Products, Activated Carbons, Microporous Structure, Adsorption, Carbonization, Pyrolysis, Stones

? Yanishpolskii, V.V., Skubiszewska-Zieba, J., Leboda, R., Tertykh, V.A. and Klischar, I.V. (2000), Methylene blue sorption equilibria on hydroxylated silica surfaces as well as on carbon-silica adsorbents (Carbosils). *Adsorption Science & Technology*, **18** (2), 83-95.

Full Text: [2000\Ads Sci Tec18, 83.pdf](2000/Ads%20Sci%20Tec18,%2083.pdf)

Abstract: The adsorption properties of hydroxylated silica gel as well as carbon-silica adsorbents (Carbosils) containing 5 and 18 w/w% carbon, both treated hydrothermally (with hydrogen peroxide solution) (HTT samples) and untreated, towards Methylene Blue (MB) were compared. The equilibrium adsorption of MB solutions of 6.5-7.0×10-4 mol/l concentration and its dependence on pH were studied. At this concentration, ca. 30% of the adsorbent surfaces investigated were covered with MB molecules under optimal adsorption conditions. The presence of carbon deposits on the silica surface did not lead to a decrease in the adsorption capacity of Carbosils relative to that of hydroxylated silica. However, such deposits increased the resistance of the adsorbent towards the action of alkalis. Oxidation of the carbon deposit in the HTT process caused a further increase in this resistance. Hence, the adsorption mechanism of MB at equilibrium in individual systems of the type investigated can differ significantly. On the one hand, this mechanism is associated with the differing behaviour of silica over a wide range of pH relative to treated and untreated Carbosils and on the other hand with the specific properties of MB.

Keywords: Activated Carbons, Adsorption Data, Aqueous-Solutions, Area, Capacities, Clay, Electronic-Structure, MICA, Orientation, X-Ray-Absorption

? Dobrowolski, R. and Stefaniak, E. (2000), Study of chromium(VI) adsorption from aqueous solution on to activated carbon. *Adsorption Science & Technology*, **18** (2), 97-106.

Full Text: [2000\Ads Sci Tec18, 97.pdf](2000/Ads%20Sci%20Tec18,%2097.pdf)

Abstract: The adsorption of chromium(VI) from dilute aqueous solutions on to activated carbons at natural pH values was investigated. The activated carbons were modified to obtain materials with a well-defined surface containing inorganic impurities at ppb or ppm level. Measurements of the adsorption kinetics relative to the degree of granulation were undertaken. It was found that the reaction rate of the ions on the surface of the activated carbon rather than diffusion was the major process influencing the equilibrium. Surface reduction of Cr-VI to Cr-III appeared to be the principal mechanism for the adsorption of chromium on the activated carbons studied. It was demonstrated experimentally that the presence of oxidizing agents dramatically changed the adsorption capacity of Cr-VI On the studied carbons. The influence of the ionic strength (controlled by the addition of NaCl) on the adsorption capacity was also studied. Variable and complex influences of the ionic strength on the adsorption capacity were observed.

Keywords: Removal

? Stefaniak, E., Dobrowolski, R. and Staszczuk, P. (2000), On the adsorption of chromium(VI) ions on dolomite and ‘dolomitic sorbents’. *Adsorption Science & Technology*, **18** (2), 107-115.

Full Text: [2000\Ads Sci Tec18, 107.pdf](2000/Ads%20Sci%20Tec18,%20107.pdf)

Abstract: The sorption capability of raw and thermally treated dolomite samples with respect to toxic ions was estimated through the adsorption of chromium(VI) from aqueous solutions. The adsorption isotherms were shown to fit the well-known Freundlich equation. The results confirm the weak adsorption of chromium(VI) on raw dolomite relative to the other dolomite-derived sorbents. The influence of ionic strength on the adsorption was also determined.

Wojsz, R. (2000), Adsorption and adsorption kinetics of the vapours of polar substances on microporous carbon adsorbents. *Adsorption Science & Technology*, **18** (3), 205-234.

Full Text: [A\Ads Sci Tec18, 205.pdf](A/Ads%20Sci%20Tec18,%20205.pdf)

Abstract: The applicability of the Polanyi-Dubinin (PD) potential theory to the adsorption of the vapours of polar and non-polar compounds on to microporous carbon adsorbents has been evaluated. Expressions describing the changes in the fundamental thermodynamic functions resulting from the modified PD theory have been presented. These dependencies are related to the adsorption isotherm equations with the inclusion of parameters for both the structural heterogeneity and the association of molecules.

Keywords: Structural Heterogeneity, Microcomputer Program, Active Carbons, Texture, Forms

Khalil, L.B., Girgis, B.S. and Tawfik, T.A.M. (2000), Porosity characteristics of activated carbons derived from olive oil wastes impregnated with H3PO4. *Adsorption Science & Technology*, **18** (4), 373-383.

Full Text: [A\Ads Sci Tec18, 373.pdf](A/Ads%20Sci%20Tec18,%20373.pdf)

Abstract: Locally discarded olive oil waste was tested as a potential raw material for the preparation of activated carbons. Chemical activation by impregnation with H3PO4 was employed using acid solutions of varying concentration in the range 30-70% followed by thermal treatment at 50-700°C. The development of porosity was followed from an analysis of the nitrogen adsorption isotherms obtained at 77 K by applying standard BET and t-plot methods. Carbons with low to moderate surface areas (273-827 m2/g) and total pore volumes (0.27-0.69 ml/g), containing essentially micropores with diameters of 8.2 Angstrom, up to 12.4 Angstrom were obtained. Increasing the concentration of impregnant led to the development of porosity with the optimum being attained at 60% H3PO4. Phosphoric acid is visualized as acting both as an acid catalyst promoting bond-cleavage reactions and the formation of new crosslinks and also as a reactant which combines with organic species to form phosphate and polyphosphate bridges which connect and crosslink biopolymer fragments. The present study suggests many applications for environmental pollution control, firstly by utilizing accumulating low-cost agricultural by-products and secondly by producing a multi-purpose high-capacity adsorbent useful in the remediation of micropollutants in various water courses.

Keywords: Phosphoric-Acid, Adsorption Characteristics, Stones, Oak

El-Nabarawy, T. and Khedr, S.A. (2000), Removal of pollutants from water using untreated and treated sawdust and water hyacinth. *Adsorption Science & Technology*, **18** (4), 385-398.

Full Text: [A\Ads Sci Tec18, 385.pdf](A/Ads%20Sci%20Tec18,%20385.pdf)

Abstract: Sawdust and water hyacinth are waste products which have no economical application in Egypt. They even constitute a solid waste as far as the environment is concerned. As-received sawdust and water hyacinth were treated with phosphoric acid, phosphoric acid + urea or phosphoric acid + urea + dimethylformamide. The as-received and treated samples were used for the removal of Methylene Blue, iodine, phenol and ammonia from their aqueous solutions.

The optimum conditions for the maximum adsorption of each pollutant were determined. The isotherms obtained obeyed the Freundlich and Langmuir equations in a satisfactory manner. The initial stages of adsorption follow first-order kinetics as predicted from the Lagergren equation. Sawdust and water hyacinth show promising potentialities for the removal of pollutants from water and can, at least, be used as precursors for the preparation of efficient adsorbents for the removal of pollutants from water.

Keywords: Activated Carbons, Adsorption, Equilibrium, Dyestuffs

? Terzyk, A.P. (2000), Adsorption of biologically active compounds from aqueous solutions on to commercial unmodified activated carbons. Part II. Temperature dependence of adsorption kinetics of 4-hydroxyacetanilide (paracetamol) at neutral pH. *Adsorption Science & Technology*, **18** (5), 477-508

Full Text: [2000\Ads Sci Tec18, 477.pdf](2000/Ads%20Sci%20Tec18,%20477.pdf)

Keywords: Activated Carbons, Adsorption, Adsorption Kinetics, Aqueous Solutions, Charcoal, Evolution, Kinetics, Oxygen, Paracetamol, pH, Pyrolysis, Surface, Water, XPS

Vasylechko, V.O., Gryshchouk, G.V., Kuz’ma, Yu.B., Lebedynets, L.O. and Oliyarnyk, O.Ya. (2000), Adsorption of cadmium on Transcarpathian clinoptilolite. *Adsorption Science & Technology*, **18** (7), 621-630.

Full Text: [A\Ads Sci Tec18, 621.pdf](A/Ads%20Sci%20Tec18,%20621.pdf)

Abstract: The adsorption properties of Ukrainian Transcarpathian clinoptilolite towards aqueous cadmium(II) solutions under static and dynamic conditions have been investigated. It has been demonstrated that cadmium(II) ions are most effectively adsorbed from sulphate solutions. The value of the adsorption capacity of clinoptilolite increased as the concentration of cadmium(II) increased in solution. The dynamic adsorption capacity of clinoptilolite towards a cadmium(II) solution at pH 5.6 under optimum conditions [adsorbent modified by heating at 130-170°C for 2.5 h; diameter of zeolite grains equal to ca. 0.20-0.31 mm; rare of flow of cadmium(II) solution of 500 ng/ml concentration through adsorbent equal to 3 ml/min] was 1.25 mg/g, while at pH 10.5 this was 3.0 mg/g. The optimal mixture for the desorption of cadmium was found to be 14 volumes of HCl (1: 2) to 1 volume of cone. HNO3. The extraction of cadmium under these conditions was 95%.

Keywords: Mordenite, Copper, Metals

Ho, Y.S., McKay, G., Wase, D.A.J. and Forster, C.F. (2000), Study of the sorption of divalent metal ions on to peat. *Adsorption Science & Technology*, **18** (7), 639-650.

Full Text: [A\Ads Sci Tec18, 639.pdf](A/Ads%20Sci%20Tec18,%20639.pdf)

Abstract: A pseudo-second order rate equation describing the kinetics of sorption of divalent metal ions on to sphagnum moss peat at various initial metal ion concentrations and peat doses has been developed. The sorption kinetics were followed based on the concentrations of metal sorbed at various time intervals. Results show that chemical sorption processes might be rate-limiting for the sorption of divalent metal ions on to peat during agitated batch contact time experiments. The rate constant, the equilibrium sorption capacity and the initial sorption rate were calculated. From these parameters, an empirical model for predicting the concentrations of metal ions sorbed was derived.

Keywords: Acid, Batch, Binding, Capacity, Contact, Contact-Time, Equilibrium, Experiments, Ions, Kinetics, Metal, Metal Ions, Model, Peat, Pseudo-Second Order, Pseudo-Second-Order, Removal, Sorption, Sorption Capacity, Sorption Kinetics, Sphagnum Moss Peat

Al-Asheh, S. and Banat, F. (2000), Adsorption of copper ions on to tyre rubber. *Adsorption Science & Technology*, **18** (8), 685-700.

Full Text: [A\Ads Sci Tec18, 685.pdf](A/Ads%20Sci%20Tec18,%20685.pdf)

Abstract: The adsorption capacity of untreated, chemically and physically activated tyre rubber towards Cu2+ ions was studied. A comparison between these three types of adsorbent was performed in terms of dynamic and equilibrium considerations. The adsorption capacity of physically activated rubber was (marginally) greater than that of chemically activated rubber which, in turn, was greater than that of the untreated materials. The effects of activation temperature and time were considered in the physical activation process. Up to 97% of the Cu2+ ions were adsorbed from aqueous solution when untreated, chemically or physically activated tyre rubber was employed as an adsorbent with initial metal concentrations of 20 mg/ml and 40 ppm, respectively. Increasing the adsorbent concentration resulted in a greater removal of metal ions from the aqueous solution, and increasing the Cu2+ ion concentration in the presence of a constant adsorbent concentration increased the metal ion loading per unit weight of the adsorbent. An increase in the initial pH value of the metal solutions enhanced the adsorption process with all three adsorbents tested. It was demonstrated that the Freundlich and Langmuir isotherms were capable of describing the adsorption of Cu2+ ions by the adsorbents under consideration reasonably well.

Keywords: Aqueous-Solutions, Activated Carbon, Cadmium, Removal

Samra, S.E. (2000), Removal of Ni2+ and Cu2+ ions from aqueous solution on to lignite-based carbons. *Adsorption Science & Technology*, **18** (9), 761-775.

Full Text: [A\Ads Sci Tec18, 761.pdf](A/Ads%20Sci%20Tec18,%20761.pdf)

Abstract: Non-activated lignites were prepared by the carbonization of Egyptian lignite in a limited quantity of air at 500 degreesC, 700 degreesC and 900 degreesC, respectively. Zinc chloride-activated carbons were also prepared by the carbonization of lignite with 20 wt%, 40 wt% and 60 wt% zinc chloride in a limited quantity of air at 600 degreesC. The surface areas of the resulting samples were determined from nitrogen adsorption studies at 77 K and from carbon dioxide adsorption studies at 298 K. The functional acidic groups on the surface were determined by neutralization with aqueous solutions of NaHCO3, Na2CO3 and NaOH, respectively. The sorption of Ni2+ and Cu2+ ions on the prepared carbons as well as on the as-received lignite (L) were investigated. The influence of the time of contact, the initial ion concentration and the temperature was studied and the kinetics of the process were investigated. Equilibrium sorption isotherms were determined and the results interpreted by applying the Freundlich and Langmuir equations. The surface area was found to generally increase with increasing carbonization temperature. For activated carbons, the surface area increased with an increase in the amount of zinc chloride used in the activation process. The chemisorption of Ni2+ and Cu2+ ions on lignite-based carbon was found to be a pseudo-second order process. The acid sites on the surface provide active sites for the chemisorption of Ni2+ and Cu2+ ions and a qualitative relationship was found to exist between the maximum sorption capacity of these metal ions and the total surface acidity.

Keywords: Activated Carbons, Adsorption, Sorption, Model

Milchert, E., Goc, W. and Pelech, R. (2000), Adsorption of CCl4 from aqueous solution on activated carbons. *Adsorption Science & Technology*, **18** (9), 823-837.

Full Text: [A\Ads Sci Tec18, 823.pdf](A/Ads%20Sci%20Tec18,%20823.pdf)

Abstract: Investigations of the adsorptivity of selected activated carbons towards aqueous solutions of carbon tetrachloride have been undertaken. The times necessary to achieve adsorption equilibrium and the course of the adsorption isotherms were determined. The isotherms may be described by the Freundlich, Langmuir or Freundlich-Langmuir equations. The adsorptivities and basic parameters for the dynamic adsorption of carbon tetrachloride on DTO activated carbon were calculated.

Kornilovich, B., Pshinko, G., Spasenova, L. and Kovalchuk, I. (2000), Influence of humic substances on the sorption interactions between lanthanide and actinide ions and clay minerals. *Adsorption Science & Technology*, **18** (10), 873-880.

Full Text: [A\Ads Sci Tec18, 873.pdf](A/Ads%20Sci%20Tec18,%20873.pdf)

Abstract: Lanthanide (Eu, Nd, Gd) and actinide (Th, U) adsorption in a system consisting of fulvic acid, metal ions and clay minerals (montmorillonite, kaolinite, illite) was studied as a function of pH, metal ion concentration and fulvic acid concentration using spectrophotometric analysis and Eu-152 tracer methods. Increasing metal ion adsorption on to the clay minerals was observed when humic substances were present in the system. The bridging of polyvalent metal ions between clay minerals and humic substance complexes was proposed as the possible adsorption mechanism.

Kadlec, O. (2001), The history and present state of Dubinin’s theory of adsorption of vapours and gases on microporous solids. *Adsorption Science & Technology*, **19** (1), 1-24.

Full Text: [A\Ads Sci Tec19, 1.pdf](A/Ads%20Sci%20Tec19,%201.pdf)

Abstract: The famous Russian scientist Mikhail Mikhailovich Dubinin had a substantial influence on the state of the present theory of physical adsorption of vapours and gases on microporous solids. He was born in Moscow on the first day of the 20th century and had the good fortune to be active in surface science - an extremely interesting branch of physical chemistry - during the period of its rapid development from his 20th year up to the last days of his long and fruitful life in 1993.

As a student at Charles University, the author of the present article had the good fortune to become acquainted with Dubinin during the latter’s first visit to Prague in May 1955 and later to be involved in extensive scientific contact with him up to the last days of his life. The author feels that he has a moral duty to record for readers of Adsorption Science & Technology not only some historically important features of the development of the universal theory of adsorption of vapours on microporous solids but also an explanation of the present state of this theory.

Keywords: Heterogeneous Surfaces

Yan, G.Y., Viraraghavan, T. and Chen, M. (2001), A new model for heavy metal removal in a biosorption column. *Adsorption Science & Technology*, **19** (1), 25-43.

Full Text: [A\Ads Sci Tec19, 25.pdf](A/Ads%20Sci%20Tec19,%2025.pdf)

Abstract: Column kinetics for metal removal could be described more adequately by a modified dose-response model than by the Thomas model or Bohart-Adams model conventionally used. The new empirical model can be used either in a linearized form or a non-linearized form. Use of the model minimizes the error resulting from use of the Thomas model, especially at lower or higher time periods of the breakthrough curve.

Keywords: Biomass

Zou, Y. and Han, B.X. (2001), Preparation of activated carbons from Chinese coal and hydrolysis lignin. *Adsorption Science & Technology*, **19** (1), 59-72.

Full Text: [A\Ads Sci Tec19, 59.pdf](A/Ads%20Sci%20Tec19,%2059.pdf)

Abstract: Activated carbons from Chinese coal and Chinese hydrolysis lignin have been prepared by chemical activation with potassium hydroxide. The following aspects of these activated materials have been analyzed: raw material; pre-treatment of raw material; activation agent, activation temperature and time, and the activation agent/raw material ratio. Activated carbons with BET specific surface areas of the order of 2400-2600 m2/g which exhibited substantial microporosity, a total pore volume of over 1.30 cm3/g and a Methylene Blue adsorption capacity of over 440 mg/g were obtained.

Al-Asheh, S. and Banat, F. (2001), Adsorption of zinc and copper ions by the solid waste of the olive oil industry. *Adsorption Science & Technology*, **19** (2), 117-129.

Full Text: [2001\Ads Sci Tec19, 117.pdf](2001/Ads%20Sci%20Tec19,%20117.pdf)

Abstract: The adsorption capacity of dried olive oil husks (SWOOI) for zinc ions (Zn) and copper ions (Cu2+) was studied. It was verified that the Freundlich and Langmuir isotherms describe the adsorption of Cu2+ and Zn2+ ions reasonably well. Up to 90% of Zn2+ ions and 80% of Cu2+ ions were adsorbed from aqueous solutions when the initial adsorbent and metal concentrations were 30 mg/ml and 20 ppm, respectively. An increase in the SWOOI concentration resulted in greater metal removal from the aqueous solution, and an increase in Zn2+ ion or Cu2+ ion concentration at constant SWOOI concentration increased the metal loading per unit weight of the adsorbent. An increase in the initial pH of the metal solutions enhanced the SWOOI adsorption process. The uptake of Zn2+ ions was also enhanced by decreasing the SWOOI particle size. The presence of a high concentration of soft ions (Na+) strongly suppressed the uptake of Zn2+ ions by SWOOI.

Keywords: Agricultural By-Products, Heavy-Metals, Aqueous-Solutions, Removal, Sorption, Water, Biosorption, Cadmium, Biomass, Nickel

Weng, C.H., Chiang, P.C. and Chang, E.E. (2001), Adsorption characteristics of CuII on to industrial wastewater sludges. *Adsorption Science & Technology*, **19** (2), 143-157.

Full Text: [2001\Ads Sci Tec19, 143.pdf](2001/Ads%20Sci%20Tec19,%20143.pdf)

Abstract: Primary, activated and aerobically digested sludges from an industrial wastewater treatment plant were collected to investigate their adsorption characteristics towards Cu-II through the use of batch experiments. Results show that the Cu-II adsorption rate was fast and could be described by a modified Freundlich equation. The rate of adsorption decreased with increasing surface loading. It was observed that the pH value of the solution was the key factor affecting the adsorption characteristics. The Langmuir adsorption model described the equilibrium adsorption well. The sludge adsorption capacities of Cu-II were in the range 17-59 mg/g and were affected by the ionic strength. Values of DeltaG(0) ranging from -7.24 to -7.65 kcal/ mol suggested that the adsorption is a physical process which is simultaneously enhanced by the electrostatic effect. The binding strength for Cull adsorption was proposed as: digested sludge > secondary sludge > primary sludge.

Keywords: Activated-Sludge

Ghazy, S.E., Samra, S.E. and El-Morsy, S.M. (2001), Removal of copper(II) from aqueous solutions by flotation using limestone fines as the sorbent and oleic acid as the surfactant. *Adsorption Science & Technology*, **19** (2), 175-185.

Full Text: [2001\Ads Sci Tec19, 175.pdf](2001/Ads%20Sci%20Tec19,%20175.pdf)

Abstract: The removal of toxic copper(II) from aqueous solutions was investigated using limestone fines (LS), which are inexpensive and widespread over the globe, as the effective inorganic sorbent with oleic acid (HOL) as the surfactant. The main parameters (i.e. initial solution pH, sorbent, surfactant and copper concentrations, stirring times, temperature and presence of foreign ions) influencing the sorption and flotation processes were examined. The results obtained showed the removal of more than 98% Cu-II at pH 7. It was also found that the addition of sodium and magnesium ions as activators enhanced the efficiency of copper separation. The procedure was successfully applied to recover copper spiked to some natural water samples. A mechanism for sorption and flotation is suggested.

Keywords: Activated Carbon, Rainbow-Trout, Pyrite Fines, Adsorption, Separation, Cadmium, Waters, Ion

Hashem, A. and El-Shishtawy, R.M. (2001), Preparation and characterization of cationized cellulose for the removal of anionic dyes. *Adsorption Science & Technology*, **19** (3), 197-210.

Full Text: [2001\Ads Sci Tec19, 197.pdf](2001/Ads%20Sci%20Tec19,%20197.pdf)

Abstract: The factors influencing the cationization of microcrystalline cellulose with 3-chloro-2-hydroxypropyl triethylammonium chloride in the presence of NaOH were investigated. The course of the reaction was followed by estimating the nitrogen content of the cationized product while its structural features were confirmed by IR analysis. The ability of cationized cellulose to adsorb anionic dyes, viz. Acid Orange 7, Direct Blue 75 and Direct Violet 31, was investigated at 25 degreesC and 50 degreesC. The equilibrium data obtained were fitted by the Langmuir and Freundlich isotherm models, allowing the corresponding adsorption parameters to be determined. The results showed that the adsorption capacity was dependent on the adsorbent, temperature, the nature of the dye and (to some extent) on van der Waals and hydrogen bonding. Cationized cellulose exhibited a much better adsorption capacity towards anionic dyes than cellulose.

Keywords: Aqueous-Solutions, Waste-Water, Jute Stick, Equilibrium, Bagasse

Sazonova, V.F., Kojemyak, M.A. and Perlova, O.V. (2001), Adsorption of tributyl phosphate on silica gel. *Adsorption Science & Technology*, **19** (3), 211-217.

Full Text: [2001\Ads Sci Tec19, 211.pdf](2001/Ads%20Sci%20Tec19,%20211.pdf)

Abstract: The adsorption behaviour of tributyl phosphate (TBP) on silica gel was studied. It was found that the adsorption isotherm shapes were complicated, being considered as S- and L-type isotherms according to the Giles classification. Adsorption itself was polymolecular and of a physical nature, the first adsorptive layer involving hydrogen bonding between the protons of surface silanol groups and the electron-donating oxygen atom of the adsorbate molecule. Subsequent adsorption layers were formed via van der Waals interaction. The free energy of adsorption of the system lay between -22.1 kJ/mol and -23.8 kJ/mol. The enthalpy change was negative and very small, i.e. -6.3 kJ/mol, while the entropy change was positive and in the range 53.9 J/(mol K) to 55.4 J/(mol K). The increase in entropy was explained in terms of the mobility of the TBP molecules in the adsorptive layer arising from their replacement on the silica gel surface by water molecules derived from the aqueous medium.

Soldatkina, L.M., Purich, A.N. and Menchuk, V. (2001), Adsorption of dyes on magnesium hydroxide. *Adsorption Science & Technology*, **19** (4), 267-272.

Full Text: [2001\Ads Sci Tec19, 267.pdf](2001/Ads%20Sci%20Tec19,%20267.pdf)

Abstract: The basic adsorption regularities of water-soluble dyes (acid, direct and basic) on magnesium hydroxide were studied. The dyes were shown to be better adsorbed on magnesium hydroxide precipitated fro rn an aqueous solution of magnesium sulphate than on magnesium hydroxide precipitated from aqueous solutions of magnesium chloride. It was demonstrated thermodynamically that magnesium hydroxide is an effective adsorbent of acid and direct dyes.

Kutarov, V.V. and Kats, B.M. (2001), Use of the lattice model for the description of adsorption isotherms of organic substances from aqueous solution. *Adsorption Science & Technology*, **19** (4), 273-277.

Full Text: [2001\Ads Sci Tec19, 273.pdf](2001/Ads%20Sci%20Tec19,%20273.pdf)

Abstract: A novel equation for describing Langmuir-type adsorption isotherms was suggested. This equation satisfies the asymptotic limit, being converted into the Freundlich or Langmuir equations in the extreme cases. The equation also provides a description of the intermediate concentration range. Application of the suggested equation was demonstrated by calculation of the adsorption isotherms of aniline, benzoic acid, o-cresol, phenol, p-chlorophenol, 3,4-dichlorophenol and 2,4,6-trichlorophenol on various types of active carbon.

Keywords: Granular Activated Carbon, General Treatment, Equilibrium, Classification

Wojsz, R. (2001), Micropore fractal dimension on the basis of the analytical solution of the global adsorption isotherm. *Adsorption Science & Technology*, **19** (4), 339-346.

Full Text: [2001\Ads Sci Tec19, 339.pdf](2001/Ads%20Sci%20Tec19,%20339.pdf)

Abstract: A Fortran program relating to the fractal parameter D was created on the basis of LMDIF programs taken from the Minpack Library and also from the book entitled Numerical Recipes in Fortran\*. The fractal dimension D has beenused to derive a new adsorption isotherm and the corresponding thermodynamic adsorption functions (differential molar enthalpy of adsorption, DeltaH, and differential molar entropy of adsorption, DeltaS).

Keywords: Dubinin-Radushkevich Equation, Structural Parameters, Activated Carbons, Potential-Theory, Thermodynamics, Surfaces, Solids

Gomonaj, V.I., Golub, N.P., Szekeresh, K.Y., Gomonaj, P.V., Charmas, B. and Leboda, R. (2001), Adsorption of lead(II) ions on transcarpathian clinoptilolite. *Adsorption Science & Technology*, **19** (6), 465-473.

Full Text: [2001\Ads Sci Tec19, 465.pdf](2001/Ads%20Sci%20Tec19,%20465.pdf)

Abstract: The adsorption of lead(II) ions on the natural forms of Transcarpathian zeolite under static and dynamic conditions was investigated. Partial conversion of inactive calcium ions in the zeolite into relatively more mobile sodium or ammonium ions resulted in an increase in the adsorption of Pb2+ ions. Similarly, partial removal of aluminium oxide from the zeolite changed its physicochemical properties and led to the maximum adsorption of lead(II) ions.

Keywords: Natural Zeolite

Shkilev, V.P. and Brei, V.V. (2001), A new adsorption isotherm for heterogeneous sorbents. *Adsorption Science & Technology*, **19** (6), 475-485.

Full Text: [2001\Ads Sci Tec19, 475.pdf](2001/Ads%20Sci%20Tec19,%20475.pdf)

Abstract: An adsorption isotherm has been suggested for the intended description of the experimental isotherms for the adsorption of gases and vapours on heterogeneous surfaces. Two parameters of the suggested equation, which characterize the heterogeneity of a sorbent, were expressed in the form of explicit functions of temperature as well as of variance and the excess coefficient for the corresponding energy distribution of adsorption sites. The presence of such explicit expressions allowed the application of the suggested equation for the description of the dependence of the adsorption not only on pressure but also on temperature. The adsorption of N2 on TiO2 was considered as an example. It was shown that the suggested equation could be used as the thermal equation of state for a real adsorption system over quite wide ranges of temperature and pressure.

Khalil, L.B., Attia, A.A. and El-Nabarawy, T. (2001), Modified silica for the extraction of cadmium(II), copper(II) and zinc(II) ions from their aqueous solutions. *Adsorption Science & Technology*, **19** (7), 511-523.

Full Text: [2001\Ads Sci Tec19, 511.pdf](2001/Ads%20Sci%20Tec19,%20511.pdf)

Abstract: Increasing concentrations of heavy metal ions in aquatic systems have led to a search for very efficient matrices for their removal, Zirconium(IV) phosphate has been used for many years as a cation-exchanger and dispersion of this phosphate on a high surface area silica might be expected to improve the extraction properties of the material.

Modified silica matrices (SiZrP) were prepared by refluxing high surface area silica with zirconium tetrachloride dissolved in ethanol, followed by stirring the dried product in an appropriate volume of 0.1 M H3PO4. The dried SiZrP samples thus obtained were used to extract Cd2+, Cu2+ and Zn2+ ions from their aqueous solutions under varying conditions.

The most efficient SiZrP sample was obtained when ZrCl4, was allowed to react with the silica in a 1:1 ratio. High extraction of all the ions studied at an initial concentration of 150 ppm was achieved over the pH range 3.5-6.0, with the order of metal ion extraction being Cd2+ > Cu2+ > Zn2+.

Keywords: Liquid-Chromatography, Gel, Surfaces

? Banat, F.A. and Al-Asheh, S. (2001), The use of columns packed with chicken feathers for the removal of phenol from aqueous solutions. *Adsorption Science & Technology*, **19** (7), 553-563.

Full Text: [2001\Ads Sci Tec19, 553.pdf](2001/Ads%20Sci%20Tec19,%20553.pdf)

Abstract: The removal of phenol from aqueous solutions by adsorption on to chicken feathers was studied experimentally using a fixed bed system, the effects of bed depth, feed flow rate and feed concentration on the breakthrough behaviour being investigated, Breakthrough curves showed the constant pattern behaviour typical of favourable isotherms, with a sharp initial breakthrough followed by a slow approach to equilibrium, The breakthrough time increased with increasing bed height, decreasing flow rate and decreasing influent concentration, Phenol uptake, however, increased with increasing feed flow rate and feed concentration. The Thomas and Bed-Depth-Service-Time (BDST) models were applied successfully to the sorptive removal of phenol.

Keywords: Adsorption

Banat, F.A. and Al-Asheh, S. (2001), The use of human hair waste as a phenol biosorbent. *Adsorption Science & Technology*, **19** (7), 599-608.

Full Text: [2001\Ads Sci Tec19, 599.pdf](2001/Ads%20Sci%20Tec19,%20599.pdf)

Abstract: Human hair waste was tested as an adsorbent for the removal of phenol from aqueous solutions. Batch experiments were carried out to determine the effects of contact time, adsorbent concentration, initial pH, temperature and salt addition on this adsorption process. It was found that the uptake of phenol was virtually complete after 1 h. Up to 92% phenol removal was achieved at an initial phenol concentration of 60 ppm. The initial pH of the solution had a strong effect on the uptake of phenol and increasing the measurement temperature also increased the uptake, The presence of NaCl salt in the adsorption system had only a marginal effect on phenol adsorption.

Keywords: Aqueous Systems, Adsorption, Removal, Adsorbent, Water

El-Shishtawy, R.M. and Melegy, A.A. (2001), Geochemistry and utilization of montmorillonitic soil for cationic dye removal. *Adsorption Science & Technology*, **19** (8), 609-620.

Full Text: [2001\Ads Sci Tec19, 609.pdf](2001/Ads%20Sci%20Tec19,%20609.pdf)

Abstract: Geochemical studies of Egyptian soil-clay minerals from three different depth and their utilization as cationic dye adsorbents are presented. X-Ray diffraction patterns revealed that the dominant clay minerals in the studied samples were montmorillonite, kaolinite and illite. The ability of montmorillonitic soil samples to adsorb cationic dyes, namely Basic Blue 9 and Basic Red 18, was investigated at 30degreesC. The equilibrium adsorption data were well fitted to the Langmuir model and their parameters determined. The results showed that the adsorption capacity was dependent on the structure of the dyes and the geochemical features of the soil samples.

Keywords: Aqueous-Solutions, Adsorption

? Zhou, Y.P., Zhou, L., Bai, S.P. and Yang, B. (2001), Experimental studies of the generalized adsorption isotherm for the supercritical region. *Adsorption Science & Technology*, **19** (8), 681-690.

Full Text: [2001\Ads Sci Tec19, 681.pdf](2001/Ads%20Sci%20Tec19,%20681.pdf)

Abstract: Some problems arise with the characteristic curve proposed by the Dubinin-Polanvi potential theory when this is applied to supercritical adsorption although, as an alternative, the generalized isotherm is capable of well modelling isotherms for different temperatures. In this paper, the general applicability of the generalized isotherm is demonstrated by the experimental adsorption data for N2 and CH4 on activated carbon and silica gel. It has been shown that although the prerequisite of an energetically uniform surface is not essential, the surface concentration is limited to a range beyond which the general isotherm cannot be constructed.

Keywords: Activated Carbon, High-Pressure Adsorption, Hydrogen

Ghazy, S.E., Samra, S.E. and El-Morsy, S.M. (2001), Sorptive-flotation of copper(II) from water using different types of powdered activated carbons as sorbents and oleic acid as surfactant. *Adsorption Science & Technology*, **19** (9), 721-736.

Full Text: [2001\Ads Sci Tec19, 721.pdf](2001/Ads%20Sci%20Tec19,%20721.pdf)

Abstract: Different types of powdered activated carbon, viz. charcoal (PACh), graphite (PG) and three samples (PACI, PACII and PACIII) prepared from olive stones generated as plant wastes and modified with aqueous oxidizing agents, viz. H2O2, HNO3 and (NH4)2S2O8, were separated from aqueous solution by flotation using oleic acid (HOL) as a surfactant. The effects of initial temperature, initial pH of the suspension, initial carbon and surfactant concentrations, stirring times and the presence of foreign ions on the flotation efficiency of the carbon samples were investigated. Under optimum conditions, separation of the carbon samples was almost complete (similar to 100%).

The separation of Cu-II-loaded carbon was also examined in the presence and absence of sulphide ions as activators. Nearly 100% Cu-II was removed at pH 7 after stirring for 30 min or on raising the temperature of the solution to 30degreesC or higher. In addition, Cu-II may be separated quantitatively at pH 3 and room temperature if sulphide ions are used as activators. The procedure was extended to the recovery of Cu-II added to some natural water samples. On the basis of IR analyses and neutralization titrations of the surface groups, a mechanism for the sorption and flotation processes is advanced.

Keywords: Adsorbing Colloid Flotation, Aqueous Systems, Rainbow-Trout, Separation, Removal, Ion, Precipitate, Seawater, Cu(II), Lead

? El Sharkawy, E.A. (2001), Adsorption of textile dyes on to activated carbons synthesized from solid waste: Decolourizing power in relation to surface properties. *Adsorption Science & Technology*, **19** (10), 795-811.

Full Text: [2001\Ads Sci Tec19, 795.pdf](2001/Ads%20Sci%20Tec19,%20795.pdf)

Abstract: Powdered wood of Eucalyptus rostrata (Myrtaceae family) obtained as a solid waste was carbonized at 873 K in a nitrogen flow. The resulting products were activated with steam (CS), zinc chloride (CZ) and phosphoric acid (CA) to obtain three series of activated carbon. The textural properties, including surface area, mean pore radius and total pore volume, were examined from the low-temperature adsorption of nitrogen at 77 K. FT-IR spectroscopy and the base neutralization capacity were used for the detection of surface groups. The adsorption power of the prepared samples for the decolourization of Remazol Brilliant Blue (RBB) and New Coccine (NC) dyes, present as carcinogenic materials in wastewater, was studied at 296 K and 318 K, respectively. FT-IR spectroscopy and the base neutralization capacities indicated the presence of carboxylic and phenolic groups on the carbon surfaces. The type and amount of activator employed had a considerable influence on the textural characteristics of the samples investigated. An increase in the activator/carbon ratio was also associated with the development of porosity and hence with an increase in the specific surface area. The Dubinin-Radushkevich (DR), Langmuir, Freundlich and Weber-Morris equations were all applied satisfactorily for the calculation of various adsorption parameters, e.g. Y-m, a, K-F and E-ads. In addition, the enthalpy of adsorption was also calculated over the temperature interval 296-318 K. It was found that the structures of the two dyes studied and the types and amounts of activators employed had a considerable influence on the adsorption parameters estimated.

Keywords: Adsorbents, Water

Nouri, S., Haghseresht, F. and Lu, M. (2002), Adsorption of aromatic compounds by activated carbon: Effects of functional groups and molecular size. *Adsorption Science & Technology*, **20** (1), 1-15.

Full Text: [A\Ads Sci Tec20, 1.pdf](A/Ads%20Sci%20Tec20,%201.pdf)

Abstract: The adsorption of three aromatic compounds on to an untreated carbon was investigated. The solution pH was lowered in all experiments so that all the solutes were in their molecular forms. It was shown that the difference in the maximum adsorption of the solutes was mainly a result of the difference in the sizes of the molecules and their functional groups. Furthermore, it was illustrated that the packing arrangement was most likely edge-to-face (sorbate-sorbent) with various tilt angles. On the other hand, the affinity and heterogeneity of the adsorption systems were apparently related to the pKa values of the solutes.

Khalfaoui, M., Baouab, M.H.V., Gauthier, R. and Ben Lamine, A. (2002), Statistical physics modelling of dye adsorption on modified cotton. *Adsorption Science & Technology*, **20** (1), 17-31.

Full Text: [A\Ads Sci Tec20, 17.pdf](A/Ads%20Sci%20Tec20,%2017.pdf)

Abstract: Experimental adsorption isotherms for four anionic dyes (Acid Blue 25, Acid Yellow 99, Reactive Yellow 23 and Acid Blue 74) on to cationized cotton have been analyzed using a multilayer adsorption model. For such purpose, the double-layer model showed the best fit with a high correlation coefficient R2. The analytical expression of the model has been established from an application of the grand canonical ensemble of statistical physics. This method allowed an estimation of all the mathematical parameters in the model. Thus, the receptor site density and the half-saturation concentration have been related to physicochemical variables such as the chemical potential, the adsorption energy, the anchorage number, etc. A physical interpretation of the model parameters has been provided and some results relating to the adsorption process discussed.

Keywords: Adsorption, Adsorption Isotherms, Anionic Dyes, Chemical, Concentration, Correlation, Cotton, Density, Dye, Dyes, Energy, Ensemble, Estimation, Isotherms, Model, Modelling, Parameters, Sorption

Khalfaoui, M., Baouab, M.H.V., Gauthier, R. and Ben Lamine, A. (2002), Dye adsorption by modified cotton steric and energetic interpretations of model parameter behaviours. *Adsorption Science & Technology*, **20** (1), 33-47.

Full Text: [A\Ads Sci Tec20, 33.pdf](A/Ads%20Sci%20Tec20,%2033.pdf)

Abstract: The variations of the three parameters, viz. anchorage number, receptor site density and half-saturation concentration, as determined theoretically (Khalfaoui *et al*. 2002) and related to the adsorption energy, exhibited different behaviours when examined in terms of the adsorption of various dyes on to modified cotton. When plotted against the percentage nitrogen content of these cottons, variations in the effective receptor site density and the inverse of the adsorbed molecules anchorage number allowed the adsorption process to be described topographically in terms of the parallel or perpendicular adsorption of the dye molecule on to the adsorbent surface. The presence of ionic or van der Waals forces in such adsorption was also considered.

The values of the model parameters were found to be related to the magnitude of the steric hindrance arising from the anchorage geometry of the dye molecule. Where the site density was high, a form of dimerization of the dye molecules was favoured. The best conditions for obtaining a high adsorption capacity, necessary for textile dyeing and wastewater depollution, were considered. Through the use of the half-saturation capacity, c1/2, it was possible to determine the change in the adsorption energy when the receptor site spacing was decreased and to relate such variation to the rate of steric hindrance, τ.

Keywords: Adsorption, Capacity, Concentration, Cotton, Density, Dye, Dyes, Energy, Model, Nitrogen, Parameters, Sorption, Wastewater

Banat, F., Al-Asheh, S. and Abu-Aitah, L. (2002), Competitive adsorption of phenol, copper ions and nickel ions on to heat-treated bentonite. *Adsorption Science & Technology*, **20** (2), 107-117.

Full Text: [A\Ads Sci Tec20, 107.pdf](A/Ads%20Sci%20Tec20,%20107.pdf)

Abstract: Industrial effluents often contain a mixture of organic and inorganic pollutants. Since the degree of removal of any solute might be affected by the presence of the other, it is important to study the competitive adsorption of these solutes. Batch experiments were carried out to study the competitive adsorption of binary combinations of phenol, copper and nickel compounds in aqueous mixtures on to heat-treated bentonite. The uptake of phenol was not affected by the presence of copper or nickel ions. However, the uptake of copper and nickel decreased in the presence of phenol. In a system that only contained both metal ions in solution, the adsorption capacity of nickel was depressed to a greater extent than that of copper. The pH of the solution strongly affected the adsorption capacity of copper in the phenol/copper system.

Saliba, R., Gauthier, H., Gauthier, R. and Petit-Ramel, M. (2002), The use of eucalyptus barks for the adsorption of heavy metal ions and dyes. *Adsorption Science & Technology*, **20** (2), 119-129.

Full Text: [A\Ads Sci Tec20, 119.pdf](A/Ads%20Sci%20Tec20,%20119.pdf)

Abstract: Eucalyptus barks harvested in Lebanon were used for the adsorption of pollutants such as heavy metal ions and dyes. Washing with water or pretreatment with formaldehyde was performed on the bark powder. The adsorption capacity of this material towards CuII, CrIII, CdII and NiII was evaluated in a batch process for various parameters. The results obtained showed that the retention capacity increased with contact time, pH and initial metal ion concentration but decreased with temperature. The adsorption capacities were 2.61, 0.71, 2.24 and 0.75 mmol/g adsorbent for CuII, CrIII, CdII and NiII, respectively.

Eucalyptus barks are also very efficient for the adsorption of dyes (Acid Blue 25, Erichrome Blue Black B and Calmagite) because of interaction between the hydroxy and amino groups of the dyes and the phenolic moities of bark. This adsorption was modified when metal ions had already been adsorbed on to the barks as a result of the formation of a 1: 1 complex between the dye and the metal ion. Desorption was achieved by treating with the sodium salt of ethylenediaminetetraacetic acid (EDTA) for metal ions and by heating at 75ºC in aqueous medium for dyes. After desorption, the recycling of the support was tested for potential use as a means of concentrating pollutants.

Keywords: Acid, Adsorbent, Adsorption, Bark, Dyes, Heavy Metal, Heavy Metal Ions, Heavy-Metal, Metal, Metal Ions

Banat, F., Al-Asheh, S. and Abu-Aitah, L. (2002), Examination of the effectiveness of physical and chemical activation of natural bentonite for the removal of heavy metal ions from aqueous solutions. *Adsorption Science & Technology*, **20** (2), 151-167.

Full Text: [A\Ads Sci Tec20, 151.pdf](A/Ads%20Sci%20Tec20,%20151.pdf)

Abstract: The ability of physically and chemically activated bentonite to adsorb copper and nickel ions from aqueous solutions was examined under various experimental conditions. Physically activated bentonite was obtained by thermal treatment of the initial material in an oven at 700degreesC (T-bentonite), while chemically activated bentonite was obtained in two ways, either by treatment of the initial material with sodium dodecyl sulphate (SDS) as an anionic surfactant to give SDS-bentonite or with aluminium hydroxypolycation as a pillaring agent to give Al-bentonite.

Batch adsorption tests were undertaken to study the removal of Cu2+ and Ni2+ ions from aqueous solutions using the above-mentioned types of activated bentonite. The adsorption capacity of the bentonites towards both Cu2+ and Ni2+ ions followed the order: Al-bentonite > SDS-bentonite > T-bentonite > natural bentonite. The initial metal concentration, solution pH, temperature and salinity of the solution affected the adsorption capacity towards both metal ions. ne uptake of Cull ions increased with an increase in temperature (25-45degreesC) as well as with an increase in the initial pH of the solution (3-5). The uptake of Cu2+ and Ni2+ ions decreased significantly with an increase in the NaCl and KCl concentrations present in the aqueous solution. Sulphuric acid of 0.1 M concentration was found to be an effective desorbent for bentonite laden with heavy metals.

Keywords: Waste-Water, Adsorption, Zinc

Kobya, M., Demirbaş, E., Öncel, S. and Şencan, S. (2002), Adsorption kinetic models applied to nickel ions on hazelnut shell activated carbons. *Adsorption Science & Technology*, **20** (2), 179-188.

Full Text: [A\Ads Sci Tec20, 179.pdf](A/Ads%20Sci%20Tec20,%20179.pdf)

Abstract: Kinetic models describing the adsorption of Ni(II) ions on to hazelnut shell active carbon (HSAC) have been compared. Kinetic studies have also been carried out in a batch adsorber over a range of initial metal ion concentration (11.87-92.34 mg/dm3), agitation speed (50-200 rpm) and adsorbent particle size (0.90-1.60 mm). The rate models evaluated included the pseudo-first order equation, the pseudo-second order equation and the Elovich equation, The results obtained showed that the pseudo-second order kinetic model correlated the experimental data well and better than the other models examined in this study.

Keywords: Activated Carbons, Active Carbon, Adsorbent, Adsorption, Agitation, Aqueous-Solution, Carbon, Copper, Elovich Equation, Experimental, Hazelnut Shell, Heavy-Metals, Kinetic, Kinetic Model, Kinetic Models, Metal, Metal-Ions, Model, Models, Ni(II), Ni(II) Ions, Nickel, Particle Size, Products, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Size, Sorbents, Sorption, Waste, Water

Stoeckli, F., Couderc, G., Sobota, R. and Lavanchy, A. (2002), The Myers-Prausnitz-Dubinin theory and non-ideal adsorption in microporous solids. *Adsorption Science & Technology*, **20** (2), 189-197.

Full Text: [A\Ads Sci Tec20, 189.pdf](A/Ads%20Sci%20Tec20,%20189.pdf)

Abstract: The adsorption of vapour and liquid mixtures of benzene + 1,2-dichloroethane, chlorobenzene + carbon tetrachloride, chlorobenzene + cyclohexane and 1-bromo, 2-chloroethane + 1,2-dichloroethane on two activated carbons and on two zeolites (UC13X and ZSM-5) was examined near room temperature. It was shown that the combination of the recent Myers-Prausnitz-Dubinin (MPD) theory with the activity coefficients of the corresponding solid-liquid equilibrium leads to a good correlation between the calculated and the experimental mole fractions for binary vapour adsorption by microporous solids. This confirms that the approach based on an ideal adsorbed state (IAS) can be improved by using these activity coefficients as a first and good approximation.

Ho, Y.S. (2002), Comment on “Removal of Ni2+ and Cu2+ ions from aqueous solutions on to lignite-based carbons”, by S.E. Samra. *Adsorption Science & Technology*, **20** (2), 199-201.

Full Text: [A\Ads Sci Tec20, 199.pdf](A/Ads%20Sci%20Tec20,%20199.pdf)

Keywords: Fungus *Aspergillus-Niger*, Sorption Kinetics, Batch System, Dye Removal, Lead, Peat, Biosorption, Equilibrium, Temperature, Biosorbent

Arpa, C., Saglam, A., Bektaş, S., Patir, S., Genç, Ö. and Denizli, A. (2002), Adsorption of mercury(II) ions by poly(hydroxyethylmethacrylate) adsorbents with thiazolidine groups. *Adsorption Science & Technology*, **20** (3), 203-213.

Full Text: [A\Ads Sci Tec20, 203.pdf](A/Ads%20Sci%20Tec20,%20203.pdf)

Abstract: A wide variety of adsorbents has been reported in the literature for heavy metal adsorption. We have recently developed a new polymer system for the removal of contaminant heavy metal ions from aquatic systems. Thus, poly(hydroxyethylmethacrylate) (PHEMA) microbeads carrying thiazolidine (0.318 mmol/g) were prepared for the removal of different amounts of mercury(II) ions (50-900 mg/l) from aqueous solutions and at different pH values (3.0-7.0). Adsorption rates were high with adsorption equilibria being reached within 10 min. The adsorption of Hg(II) ions on to the thiazolidine-immobilized microbeads from single solutions amounted to 1.11 mmol/g. The formation constant of the thiazolidine-metal ion complex was investigated by the method of Ruzvic/. The calculated value of the stability constant was 9.11×105 l/mol for the Hg(II)-thiazolidine complex. PHEMA microbeads carrying thiazolidine may be regenerated by washing with a solution of hydrochloric acid (0.05 M). The maximum desorption ratio was as high as 99%. These PHEMA microbeads may be used repeatedly for more than three adsorption/desorption cycles without any considerable loss in adsorption capacity.

Buszewski, B. and Zbytniewski, R. (2002), Test of some aspects of modelling the sorption of hydrophobic compounds in soils. *Adsorption Science & Technology*, **20** (3), 231-242.

Full Text: [A\Ads Sci Tec20, 231.pdf](A/Ads%20Sci%20Tec20,%20231.pdf)

Abstract: A study was carried out on the sorption of the herbicide linuron in podzolic soil (one of the typical soils of Poland), the sorption isotherms being obtained using batch equilibrium studies. Modelling sorption phenomena involving the interactions of chemicals and particularly herbicides is very difficult because of the strong heterogeneity of the soil matrix. The present work presents the results of applying the most common models, i.e. Freundlich and Linear, as well as the newer concept of the Dual Reactive Domain model. The data obtained were validated using various statistical and chemometric methods.

The results suggest that applying the non-linear least-squares method to obtain isotherm parameters gave a much better description of the sorption phenomena than often obtained using linear transformations of the adsorption equations. The study also showed that appropriate weighting schemes should be included in any model calculations. To test the goodness-of-fit of the model to the experimental data both the correlation coefficient and the Residual Root Mean Square Error were obtained. The models were also compared using the Extra Sum of Squares Principle statistical test.

Keywords: Distributed Reactivity Model, Nonlinear Least-Squares, Curve-Fit, Adsorption, Sediments, Langmuir, Desorption, Degradation, Chemicals, Constants

Banat, F., Al-Asheh, S. and Al-Rousan, D. (2002), A comparative study of copper and zinc ion adsorption on to activated and non-activated date-pits. *Adsorption Science & Technology*, **20** (4), 319-335.

Full Text: [A\Ads Sci Tec20, 319.pdf](A/Ads%20Sci%20Tec20,%20319.pdf)

Abstract: Date-pits (an agricultural by-product available commercially) were utilized, with and without activation, as an adsorbent for the removal of Zn2+ and Cu2+ ions from aqueous solutions. Activated carbons were prepared from date-pits by carbon dioxide activation at 700ºC. The effects of contact time, pH, temperature and the adsorbent concentration on the removal of Zn2+ and Cu2+ ions were studied. The Freundlich isotherm model described the equilibrium adsorption data. Nonactivated date-pits exhibited higher Zn2+ and Cu2+ ion uptake than activated date-pits. The uptake of Cu2+ ions by both activated and non-activated date-pits was higher than the uptake of Zn2+ ions. The uptake of both metal ions increased on increasing the pH value of the system from 3.5 to 5.0 as well as on decreasing the temperature from 50ºC to 25ºC. Adsorption capacities for the non-activated date-pits towards Cu2+ and Zn2+ ions as high as 0.15 mmol/g and 0.09 mmol/g, respectively, were observed. This study demonstrated that date-pits without any physical or chemical pretreatment could be used as an effective adsorbent for the treatment of waters containing heavy metal ions such as Zn2+ and Cu2+.

Banat, F., Al-Asheh, S. and Al-Rousan, D. (2002), Comparison between different keratin-composed biosorbents for the removal of heavy metal ions from aqueous solutions. *Adsorption Science & Technology*, **20** (4), 393-416.

Full Text: [A\Ads Sci Tec20, 393.pdf](A/Ads%20Sci%20Tec20,%20393.pdf)

Abstract: This study examined and compared the ability of chicken feathers, Zn2+ hair and animal horns, as keratin-composed biosorbents, for the removal of Zn2+ and Cu2+ ions from single metal ion aqueous solutions under different operating conditions. The three biosorbents investigated in this study were all capable of adsorbing Zn2+ and Cu2+ ions from aqueous solutions. The biosorbent showing the highest uptake of Zn2+ and Cu2+ ions was animal horns. Chicken feathers showed a higher Cu2+ ion uptake and a lower Zn2+ ion compared to human hair. Increasing the initial concentration of Zn2+ or Cu2+ ions, or increasing the initial pH value, increased the metal ion uptake. Such uptake decreased when the temperature was raised from 25degreesC to 50degreesC for all adsorbent/metal ion combinations except for Zn2+ ion/human hair where the uptake increased with temperature. It was demonstrated that the addition of NaCl salt to the metal ion solution depressed the metal ion uptake. The Freundlich isotherm model was found to be applicable to the adsorption data for Cu2+ and Zn2+ ions.

Keywords: Adsorption, Bark, Binding, Biomass, Cadmium, Carbon, Chicken Feathers, Freundlich Isotherm, Heavy Metal, Heavy Metal Ions, Heavy-Metal, Mercury, Metal, Metal Ions, Removal, Sorption, Wastes, Water

Kapica, J., Pelech, R., Przepiórski, J. and Morawski, A.W. (2002), Kinetics of the adsorption of copper and lead ions from aqueous solution on to WD-ekstra activated carbon. *Adsorption Science & Technology*, **20** (5), 441-452.

Full Text: [A\Ads Sci Tec20, 441.pdf](A/Ads%20Sci%20Tec20,%20441.pdf)

Abstract: The kinetics of the adsorption of Cu2+ and Pb2+ ions from aqueous solution on to WD-ekstra activated carbon was studied by batch methods. Such adsorption processes proceeded in two stages: an initial rapid stage followed by a slower one. The Bangham equation was used to describe the kinetics of both adsorption processes. Measurements were carried out for solutions containing only one type of metal ion and also for binary systems containing both Cu2+ and Pb2+ ions. A considerable influence of Pb2+ ions on the adsorption of Cu2+ ions was observed in the binary system. It was found that the equilibrium isotherms could be analyzed using the Langmuir, Freundlich-Langmuir and Freundlich methods.

Zghida, H., Baouab, M.H.V. and Gauthier, R. (2002), Adsorption of oleate anions on to cationized lignocelluloses. *Adsorption Science & Technology*, **20** (6), 555-563.

Full Text: [A\Ads Sci Tec20, 555.pdf](A/Ads%20Sci%20Tec20,%20555.pdf)

Abstract: Oleic acid and its salts are present among the toxic pollutants in olive oil mill wastewaters. Four lignocellulosic materials modified by grafting quaternary ammonium groups have been tested for the adsorption of the oleate anion from aqueous solutions, viz. cotton fibres, viscose fabric, wood sawdust and maize cob powder. As a result of their strong ionic interactions, the carboxylate moities were entrapped at a rate equivalent to the ammonium content of the support. Furthermore, when this charged support was left in contact with the polluted solution without agitation, an additional quantity of pollutant was adsorbed due to associations by the hydrophobic tails of the oleate moities. Partial desorption was achieved in 1 M HCl solution.

Keywords: Adsorption, Biodegradation, Immobilization, Ion- Exchanger, Mill Waste-Water, Olive Oil Mills, Oxidation, Removal, Residual Dyes, Sawdust, Urban, Wastewaters

Nassar, M.M., Daifullah, A.E.H.A., Magdy, Y.H. and Ebrahiem, E.E. (2002), Uptake of cationic dyes by cement kiln dust: Sorption mechanism and equilibrium isotherm. *Adsorption Science & Technology*, **20** (7), 657-6681.

Full Text: [A\Ads Sci Tec20, 657.pdf](A/Ads%20Sci%20Tec20,%20657.pdf)

Abstract: The mechanistic aspects of the sorption of Basic Blue-3 and Basic Red-22 on to cement kiln dust (CKD) have been investigated. The by-pass kiln dust before and after washing with water was characterized by X-ray diffraction methods, IR spectroscopy and elemental analysis. Two forms of by-pass kiln dust were used in this study without any treatment, i.e. in powder and pelletized form (the latter being achieved using water or sodium silicate).

Equilibrium isotherms to assess the maximum capacity of the two basic dyes on the two forms of CKD were evaluated using a computer program. This allowed two-, three- and four-parameter adsorption models to be studied; it was found that the piecewise Freundlich isotherm yielded an excellent overall fit. Washing with water led to the loss of some active sites responsible for the sorptive capacity. The increase in capacity observed after pelletization with water rather than with sodium silicate could be explained by an increase in hydroxy moieties that undergo exchange reactions. In both cases of pelletization, the adsorption capacity was less than for the unwashed powdered form. The uptake order was found to be: unwashed powder > pellets with water > pellets with sodium silicate.

Keywords: Dilute Aqueous-Solutions, Activated Carbon, Adsorption Equilibria, Adsorbents, Dyestuffs, Removal, Cost

Weng, C.H. (2002), Adsorption characteristics of new coccine dye on to sludge ash. *Adsorption Science & Technology*, **20** (7), 669-681.

Full Text: [A\Ads Sci Tec20, 669.pdf](A/Ads%20Sci%20Tec20,%20669.pdf)

Abstract: The adsorption characteristics of an anionic azo dye (New Coccine) on to sewage sludge ash were studied. Results showed that the ash could remove the dye effectively from aqueous solution. The adsorption rate was fast and could be expressed by the modified Freundlich equation. It was found that pH is the most important parameter affecting the adsorption characteristics. The experimental data were correlated well to the non-linear multilayer adsorption isotherm. The ash adsorption capacities for the dye were in the range 3.25-5.70 mol/g and were affected by the pH, ionic strength and temperature. Decreasing pH, ionic strength and temperature increased the adsorption density. The effect of electrical double-layer thickness on the adsorption was discussed. Thermodynamic parameters indicated that the adsorption was an exothermic process. Values of the first-layer adsorption energy, DeltaG(1)(0), ranged from -6.86 to -7.45 kcal/mol, suggesting that the adsorption could be considered as a physical process simultaneously enhanced by the electrostatic effect. The multilayer adsorption energy, DeltaG(2)(0), ranged from -4.33 to -4.51 kcal/mol, suggesting that the adsorption was of the typical physical type. On the basis of the monolayer dye adsorption capacity, the specific surface area of the ash was calculated as 3.84-6.73 m2/g.

Keywords: Activated-Sludge, Surface-Area

Ho, Y.S. and McKay, G. (2002), Application of kinetic models to the sorption of copper(II) on to peat. *Adsorption Science & Technology*, **20** (8), 797-815.

Full Text: [A\Ads Sci Tec20, 797.pdf](A/Ads%20Sci%20Tec20,%20797.pdf)

Abstract: A comparison of the kinetics of the sorption of copper(II) on to peat from aqueous solution at various initial copper(II) concentrations and peat doses was made. The Elovich model and the pseudo-second order model both provided a high degree of correlation with the experimental data for most of the sorption process. There was a small discrepancy at the initial stages of sorption which suggested that film diffusion or wetting of the peat may be involved in the early part of the sorption process. Models evaluated included the fractional power equation, the Elovich equation, the pseudo-first order equation and the pseudosecond order equation. The kinetics of sorption were followed based on the sorption capacity of copper(II) on peat at various time intervals. Results show that chemical sorption processes may be rate-limiting in the sorption of copper(II) on to peat during agitated batch contact time experiments. The rate constant, the equilibrium sorption capacity and the initial sorption rate were calculated. From these parameters, an empirical model for predicting the concentrations of metal ions sorbed was derived.

Keywords: Adsorption, Aqueous Solution, Aqueous-Solutions, Batch, Capacity, Carbon, Comparison, Contact, Contact-Time, Copper(II), Correlation, Diffusion, Dyestuffs, Elovich, Elovich Equation, Elovich Model, Equilibrium, Experiments, Film, Heavy-Metals, Humic-Acid, Ion-Exchange, Ions, Kinetic, Kinetic Models, Kinetics, Mass-Transfer, Metal, Metal Ions, Model, Models, Peat, Power, Process, Pseudo-First Order, Pseudo-First Order Equation, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Soil Organic-Matter, Sorption, Sorption Capacity

Al-Asheh, S., Banat, F. and Al-Rousan, D. (2002), Adsorption of copper, zinc and nickel ions from single and binary metal ion mixtures on to chicken feathers. *Adsorption Science & Technology*, **20** (9), 849-864.

Full Text: [A\Ads Sci Tec20, 849.pdf](A/Ads%20Sci%20Tec20,%20849.pdf)

Abstract: Certain industries often produce mixtures of heavy metal ions in their waste products. Because of the nature of heavy metal ions and the adsorption process, such metal ions can compete with each other for the sorption sites on an adsorbent during adsorption processes. In the present work, binary systems composed of copper, zinc and nickel ions were selected as examples of heavy metal ion mixtures and tested via batch adsorption processes using chicken feathers as an adsorbent. The uptake of individual metal ions was depressed by the presence of another. Thus, the uptake of copper ions from an initial copper ion solution of 20 ppm concentration was reduced from 0.042 mmol/g to ca. 0.019 mmol/g by the presence of a similar concentration of nickel ions. The Freundlich, Langmuir and Sips multi-component adsorption models were employed to predict the uptake of metal ions from binary metal ion solutions using constants obtained from adsorption isotherm models applied to single-solute systems.

Keywords: Activated Carbon, Aqueous-Solution, Removal, Waste

Nassar, M.M., Awida, K.T., Ebrahiem, E.E., Magdy, Y.H. and Mehaedi, M.H. (2003), Fixed-bed adsorption for the removal of iron and manganese onto palm fruit bunch and maize cob. *Adsorption Science & Technology*, **21** (2), 161-175.

Full Text: [A\Ads Sci Tec21, 161.pdf](A/Ads%20Sci%20Tec21,%20161.pdf)

Abstract: The sorption of iron and manganese onto palm fruit bunch and maize cob in a fixed-bed column was studied. The influence of process variables such as the bed height, the solution flow rate and the percentage breakthrough were investigated. The experimental results showed that the adsorbents used removed the studied metal ions effectively. The Bed Depth Service Time Model (BDST) was used to analyse the experimental data and identify design correlations. The Empty Bed Residence Time (EBRT) model, used for optimising the adsorbent exhaustion rate and the time required for influent to fill the column, was also considered.

Keywords: Adsorbent, Adsorption, Bdst, Breakthrough, Design, Diffusion, Dyes, Fixed Bed, Fixed-Bed Column, Flow Rate, Kinetics, Removal, Sorption, Systems

Al-Asheh, S., Banat, F. and Al-Hamed, N. (2003), Adsorption of pollutants from aqueous solutions using activated and non-activated oak shells: Parametric and fractional factorial design study. Part I. Removal of copper. *Adsorption Science & Technology*, **21** (2), 177-188.

Full Text: [A\Ads Sci Tec21, 177.pdf](A/Ads%20Sci%20Tec21,%20177.pdf)

Abstract: Non-activated and chemically activated oak shells were evaluated for their ability to remove Cu2+ ions from aqueous solutions. Batch adsorption experiments were conducted to investigate the effect of contact time, sorbent concentration, Cu2+ ion concentration and the pH of the solution on the sorption process. The Cu2+ ion uptake by oak shells increased with decreasing sorbent concentration or with an increase in Cu2+ ion concentration or solution pH.

The fractional factorial design technique was applied in order to determine the average Cu2+ ion uptake, the contribution of each operating variable to the value of the uptake and the interaction among the operating variables when the sorbent type, sorbent concentration, Cu2+ ion concentration, pH, contact time and salt were all varied from one level to another.

Application of this technique showed that the sorbent concentration had the largest influence on the value of the Cu2+ ion uptake followed by Cu2+ ion concentration and sorbent type. Interaction among the different operating variables played an important role in the adsorption process.

Keywords: Low-Cost Adsorbents, Color Removal, Sorption, Dyes

Al-Asheh, S., Banat, F., Saeidi, R. and Abu Zaid, S. (2003), Adsorption of pollutants from aqueous solutions using activated and non-activated oak shells: Parametric and fractional factorial design study. Part II. Removal of phenol and dyes. *Adsorption Science & Technology*, **21** (2), 189-198.

Full Text: [A\Ads Sci Tec21, 189.pdf](A/Ads%20Sci%20Tec21,%20189.pdf)

Abstract: As in Part I, non-activated (natural) and chemically activated oak shells were evaluated for their ability to remove phenol and Methylene Blue (as a typical dye component) from aqueous solutions. Batch adsorption experiments were conducted to investigate the effect of contact time, sorbent concentration, phenol concentration and the pH of the solution on the sorption process.

Activated oak shells adsorbed more phenol than natural oak shells under the same conditions. A decrease in sorbent concentration or an increase in phenol concentration or solution pH resulted in an increase in phenol uptake by the oak shells. The uptake of Methylene Blue increased with decreasing sorbent concentration and with an increase in the dye concentration, but decreased significantly with solution pH.

According to the fractional factorial design technique, the sorbent type employed (natural or activated) had the most significant influence on phenol or Methylene Blue uptake followed by sorbent concentration and then sorbate concentration. Interaction amongst the different operating variables played an important role in the uptake of phenol or Methylene Blue dye by the adsorbent considered.

Keywords: Effluents, Cost, Adsorbents, Waste

? Gönülşen, R., Yıldız, N. and Çalimli, A. (2003), Adsorption of organic compounds on to bentonites modified with single or dual quaternary ammonium cations. *Adsorption Science & Technology*, **21** (2), 135-148.

Full Text: [2003\Ads Sci Tec21, 135.pdf](2003/Ads%20Sci%20Tec21,%20135.pdf)

Abstract: The adsorption of benzoic acid, hydroquinone and toluene on to bentonites modified with single or dual quaternary ammonium cations was studied. Thus, the mineral surface of the bentonite was modified by replacing the inorganic ions with four quaternary ammonium cations, i.e. tetramethylammonium (TMA), benzyltriethylammonium (BTEA), hexadecyltrimethylammonium (HDTMA) and octadecyltrimethylammoniurn (ODTMA). The inorganic cations on the bentonite were exchanged with the quaternary ammonium cations to the respective extent of ca. 35% TMA, 75% BTEA, 83% HDTMA, 90% ODTMA, 35% TMA/54% HDTMA, 35% TMA/58% ODTMA and 75% BTEA/12% HDTMA of the cation-exchange capacity (CEC) of the bentonite, resulting in a change in the surface properties from hydrophilic to organophilic. The experimental results obtained indicated that the adsorption affinity on dual-modified bentonites was generally lower than that on single-modified bentonites. It was concluded that this resulted from two different adsorption mechanisms and the competitive adsorption of binary solutes.

Keywords: Adsorption, Ammonium, Bentonite, Benzene, Benzoic Acid, Capacity, Cation Exchange Capacity, Clay, Hydraulic Conductivity, Inorganic, Inorganic Ions, Mechanisms, Mineral, Montmorillonite, Organic, Organic Compounds, Organobentonites, Phenol, Properties, Quaternary, Smectite, Tetrachloromethane Sorption, Toluene, Water

Khan, A., Ahmed, S., Mahmood, F. and Khokhar, M.Y. (2003), A novel dye-doped sol-gel silica sorbent for the removal of cobalt. *Adsorption Science & Technology*, **21** (3), 205-215.

Full Text: [A\Ads Sci Tec21, 205.pdf](A/Ads%20Sci%20Tec21,%20205.pdf)

Abstract: A TAR [4-(2-thiazolylazo)resorcinol] doped sol-gel silica sorbent (red colour, porous, stable, hard, non-swelling) was prepared, characterized and investigated for the removal of Co(II) from aqueous solutions. The kinetics, adsorption isotherm, equilibration time and effect of pH on such removal were studied to optimize the conditions necessary for large-scale application. Rapid equilibration was observed with adsorption equilibria being attained within 10 min. The adsorption of cobalt ions onto the plain (undoped) so]-gel silica was negligible. The maximum adsorption of Co(II) ions onto the TAR-doped sol-gel silica from single solutions was 12.6 mumol/g. The TAR-doped sol-gel silica could be regenerated by washing with a 0.1 M HCl solution to give a maximum regeneration value as high as 98.5%. The TAR-doped sol-gel silica could be used for more than three consecutive adsorption/desorption cycles without experiencing any considerable loss of adsorption capacity. The adsorption process and the nature of the Co-TAR complex were discussed.

Keywords: Heavy-Metal Ions, Cibacron-Blue, Electrodes, Composite, Microbeads, Adsorption, Glass

Kajitvichyanukul, P., Chenthamarakshan, C.R., Rajeshwar, K. and Qasim, S.R. (2003), Adsorption of thallium(I) ions on titania particle surfaces in aqueous media. *Adsorption Science & Technology*, **21** (3), 217-228.

Full Text: [A\Ads Sci Tec21, 217.pdf](A/Ads%20Sci%20Tec21,%20217.pdf)

Abstract: A description is given of the modification of the adsorption of Tl(I) on a titania (Degussa P-25) surface by the presence of organic or inorganic co-additives in aqueous suspensions. The addition of oxalate, formate, acetate and phosphate anions (the latter at low levels below similar to 0.03 M) increased Tl(I) adsorption while the phosphate anion (at levels > similar to 0.03 M) inhibited Tl(I) adsorption. A surface complexation model comprising the titania surface sites, the anchor co- additives and bound Tl(l) species was invoked to explain the adsorption enhancement observed. The data presented build upon and complement those acquired earlier showing how metal ion adsorption on a TiO2 surface is strongly influenced by co- additives in the aqueous medium.

Keywords: Dioxide Surface, Hydrolyzable Metal-Ions, Mass Titration, Model Systems, Oxide-Water Interface, Photocatalytic Reduction, Salicylic-Acid, Suspensions, TiO2 Ceramic Membranes, Zero Charge

Banat, F., Al-Asheh, S. and Al-Makhadmeh, L. (2003), Kinetics and equilibrium study of cadmium ion sorption onto date pits: An agricultural waste. *Adsorption Science & Technology*, **21** (3), 245-260.

Full Text: [A\Ads Sci Tec21, 245.pdf](A/Ads%20Sci%20Tec21,%20245.pdf)

Abstract: Activated carbons derived from date pits obtained as a surplus agricultural solid waste and natural date pits were used for the adsorption of cadmium ions from water. The effect of contact time, pH, temperature, cadmium ion concentration, sorbent dose, salinity, as well as the activation temperature on the removal of cadmium ions by date pits was studied. The maximum adsorption capacity of date pits for cadmium ions was obtained using the linear Langmuir isotherm model and used as a basis for comparative purposes. Three sorption kinetic models were used for explaining the probable mechanisms of cadmium ion uptake. The kinetic data for the adsorption process obeyed a second-order rate equation.

Keywords: Activated Carbons, Adsorption, Aqueous-Solutions, By-Products, Cadmium, Heavy-Metals, Kinetic, Langmuir, Metal-Ions, Pine Bark, Pretreated Biomass, Removal, Single-Component, Sorption, Waste

Attahiru, S., Shiundu, P.M., Onyari, J.M. and Mathu, E.M. (2003), Removal of Cu(II) from aqueous solution using a micaceous mineral of Kenyan origin. *Adsorption Science & Technology*, **21** (3), 269-283.

Full Text: [A\Ads Sci Tec21, 269.pdf](A/Ads%20Sci%20Tec21,%20269.pdf)

Abstract: A micaceous mineral (MicaM) available locally in Kenya was utilized as an inexpensive and effective adsorbent for the removal of Cull ions from aqueous solution. The effects of contact time, pH, temperature, adsorbate and adsorbent concentrations, and the concentration of electrolyte on the removal of Cull ions were studied. Maximum removal of Cu2+ ions occurred over the pH range 4.0-7.0. The adsorption of Cull ions increased with an increase in the dose ratio of mineral to Cu2+ ion concentration and decreased with adsorbent particle size. Isotherm analysis of the adsorption data obtained at 25degreesC showed that the adsorption of Cull ions on MicaM followed both the Langmuir and Freundlich isotherms. The uptake of Cu2+ ions increased on increasing the pH of the solution from 1.5 to 7.0 as well as on increasing the temperature from 25(degrees) to 60degreesC. An adsorption capacity of 0.850 g/g was achieved for MicaM towards the Cu2+ ion. This study has demonstrated that locally abundant micaceous mineral can be used as an effective adsorbent for the treatment of waters containing Cull ions without any prior chemical pretreatment.

Keywords: Activated Carbon, Heavy-Metals, Adsorption, Lead, Water, Mercury(II), Equilibrium, Adsorbent, Bentonite, Sorbents

Ghazy, S.E., Samra, S.E., Mahdy, A.M. and El-Morsy, S.M. (2003), Removal of copper(II) ions from aqueous solutions. I. Adsorption studies using powdered marble wastes as sorbent. *Adsorption Science & Technology*, **21** (3), 285-296.

Full Text: [A\Ads Sci Tec21, 285.pdf](A/Ads%20Sci%20Tec21,%20285.pdf)

Abstract: Batch adsorption experiments of copper(II) ions from aqueous solutions on to powdered marble wastes (PMW) have been performed. The latter is an effective inorganic sorbent which is inexpensive, widespread and may represent an environmental problem. The main parameters influencing the sorption process, i.e. initial solution pH, sorbent and Cu2+ ion concentrations, stirring times and temperature, were examined. The results obtained revealed that the sorption of Cull ions on to PMW was endothermic in nature and followed first order kinetics. Moreover, it was well described by the Langmuir, Freundlich and Dubinin-Radushkevich (D-R) adsorption models over the concentration range studied. Under the optimum experimental conditions employed, the removal of ca. 100% Cu2+ ions was attained.

Keywords: Activated Carbon, Heavy-Metals, Oleic-Acid, Fly-Ash, Flotation, Sorption, Water, Biosorption, Surfactant, Fines

Mustafa, S., Dilara, B., Naeem, A., Rehana, N. and Nargis, K. (2003), Temperature and pH effect on the sorption of divalent metal ions by silica gel. *Adsorption Science & Technology*, **21** (4), 297-307.

Full Text: [A\Ads Sci Tec21, 297.pdf](A/Ads%20Sci%20Tec21,%20297.pdf)

Abstract: The sorption of Zn2+, Ni2+ and Cd2+ ions by silica gel was studied as a function of ion concentration, pH and temperature. An increase in all three parameters led to an increase in the extent of sorption for all the metal cations studied. The selectivity of the solid was observed to be in the order Zn2+>Ni2+>Cd2+. Sorption of the metal cations was accompanied by the release of H+ ions into the bulk phase. On average two moles of H+ ions were released per mole of metal cation sorbed. The sorption data fitted the linear forms of both the Kurbatov and Langmuir adsorption equations. The values of the binding constants were used to estimate the apparent thermodynamic parameters, DeltaH and DeltaS, for the adsorption process. FT-IR spectroscopic studies also showed that the uptake of metal cations by the silica gel occurred via a cation-exchange process.

Keywords: Aqueous-Solution, Adsorption, Cations, Oxides, Charge, Goethite, Transition, Interface, Phosphate, Cadmium

Faghihian, H., Malekpour, A. and Maragheh, M.G. (2003), Removal of radioactive iodide by surfactant-modified zeolites. *Adsorption Science & Technology*, **21** (4), 373-381.

Full Text: [A\Ads Sci Tec21, 373.pdf](A/Ads%20Sci%20Tec21,%20373.pdf)

Abstract: The removal of radionuclides such as I-129 and I-131 from radioactive liquid wastes was studied. Two natural zeolites were modified with different quaternary alkylammonium ions to replace the exchangeable cations from the zeolite surface and used as adsorbent materials. The quaternary ions used for such purpose were hexadecyltrimethylammonium, tetradecyltrimethylammonium, dodecyltrimethylammonium, tetrabutylammonium and tetramethylammonium, respectively. Some of the modified forms exhibited an adsorption capacity much higher than those of the respective natural samples. In contrast, the adsorption capacity was negligible when tetrabutylammonium and tetramethylammonium ions were used. Adsorption experiments were conducted by batch and continuous experiments, and adsorption isotherms constructed from the data obtained. The effect of interfering anions on the adsorption capacity was also investigated as were the breakthrough behaviours of radioiodide in a column charged with the various adsorbents. Desorption of iodide from the modified zeolites into different solutions was also investigated. It was concluded that, in some cases, surfactant modification was an efficient process for the uptake and immobilization of iodide.

Keywords: Adsorption, Clinoptilolite, Ion, Radioiodide, Sorption, Waste

Ma, L.X., Holste, J.C. and Hall, K.R. (2003), Using an exponential equation to describe adsorption/desorption processes of water on composite soil at constant pressure. *Adsorption Science & Technology*, **21** (4), 383-388.

Full Text: [A\Ads Sci Tec21, 383.pdf](A/Ads%20Sci%20Tec21,%20383.pdf)

Abstract: Using the assumption that adsorption as a function of time may be expressed by an exponential equation, viz. DeltaM = g+he(- t/tau), it is possible to obtain the amount of water vapour adsorbed by a composite soil without waiting for equilibrium, which usually takes a long time. Given the experimental data for the amounts adsorbed versus time, one can determine g, h and tau, together with the amounts adsorbed at equilibrium by extrapolating the above equation to t-->infinity. It is also possible to calculate the error trends in these parameters as a function of time by comparing the values at time t with those obtained for the longest experimental time. The error trends of the equation with time arise from the comparison of the experimental values with those predicted by the exponential equation. We have discovered that although different lengths of time are necessary for different pressures, generally a time between 1.5tau and 2tau is sufficient to obtain reliable results with errors less than 5%. We have also found that this equation describes the desorption process as well.

Al-Asheh, S., Banat, F. and Abu-Aitah, L. (2003), The removal of Methylene blue dye from aqueous solutions using activated and non-activated bentonites. *Adsorption Science & Technology*, **21** (5), 451-462.

Full Text: [A\Ads Sci Tec21, 251.pdf](A/Ads%20Sci%20Tec21,%20251.pdf)

Abstract: An improvement in the adsorption capacity of naturally available bentonite towards water pollutants such as Methylene Blue dye (MBD) is certainly needed. For this purpose, sodium bentonite was activated by two methods: (1) treatment with sodium dodecyl sulphate (SDS) as an ionic surfactant and (2) thermal treatment in an oven operated at 850degreesC. Batch adsorption tests were carried out on removing MBD from aqueous solution using the above-mentioned bentonites. It was found that the effectiveness of bentonites towards MBD removal was in the following order: thermal-bentonite > SDS-bentonite > natural bentonite. X-Ray diffraction analysis showed that an increase in the microscopic bentonite platelets on treatment with SDS was the reason behind the higher uptake of MBD. An increase in sorbent concentration or initial pH value of the solutions resulted in a greater removal of MBD from the solution. An increase in temperature led to an increase in MBD uptake by the bentonites studied in this work. The Freundlich isotherm model was employed and found to represent the experimental data well.

Keywords: Color Removal, Adsorption, Surfactant, Sorption, Adsorbents, Effluents, Carbon, Clays, Cost, Al

Li, Y.H., Luan, Z.K., Xiao, X., Zhou, X.W., Xu, C.L., Wu, D.H. and Wei, B.Q. (2003), Removal of Cu2+ ions from aqueous solutions by carbon nanotubes. *Adsorption Science & Technology*, **21** (5), 475-486.

Full Text: [A\Ads Sci Tec21, 475.pdf](A/Ads%20Sci%20Tec21,%20475.pdf)

Abstract: Carbon nanotubes (CNTs), a new crystalline form in the carbon family, have been shown to be an effective adsorbent for Cu2+ ion removal from aqueous solution. After oxidation with nitric acid, the adsorption capacity of the oxidized CNTs towards Cu2+ ions at a pH of 5.2 reached 27.6 mg/g, compared to a value of only 14.4 mg/g for the as-grown CNTs under the same circumstances. Increasing the pH to 5.4 led to 95% removal of Cu2+ ions with the oxidized CNTs, whereas with the as-grown CNTs it was necessary to increase the pH to 8.6 to achieve the same extent of removal. The Cu2+ ion adsorption capacity increased with increasing CNT dosage for the different initial Cu2+ ion concentrations. The kinetic curve for adsorption of the Cu2+ ions suggested that not only the outer surfaces but also inner cavities and interlayers in the structures of the CNTs were responsible for the removal of the ion from aqueous solutions.

Keywords: Activated Carbon, Heavy-Metals, Adsorption, Cu(II), Surface, Copper, Sorption, Water, Shell, Husk

Kandah, M.I., Abu Al-Rub, F.A. and Al-Dabaybeh, N. (2003), The aqueous adsorption of copper and cadmium ions onto sheep manure. *Adsorption Science & Technology*, **21** (6), 501-509.

Full Text: [A\Ads Sci Tec21, 501.pdf](A/Ads%20Sci%20Tec21,%20501.pdf)

Abstract: Dried sheep manure (SM) has been found to be an effective adsorbent for the removal of copper and cadmium ions from dilute aqueous solutions. Batch adsorption experiments using different concentrations of copper and cadmium ions (2.0-20.0 mg/ml) were carried out for different periods of agitation. Adsorption uptakes were found to increase with an increase in the initial metal ion concentration, SM concentration and solution pH for both copper and cadmium ions.

Maximum uptakes for 100 ppM Cu2+ and 100 ppm Cd2+ ions were found to be 17.8 mg/g and 10.8 mg/g, respectively. The equilibrium uptakes for both copper and cadmium ions were attained within the first 10 min. The Langmuir isotherm model failed to represent the adsorption of both copper and cadmium ions on SM. In contrast, the Freundlich isotherm model fitted the experimental data for both copper and cadmium ions very well. The presence of EDTA in the solution decreased the equilibrium uptake of both copper and cadmium ions significantly.

Keywords: Chelating-Agents, Heavy-Metals, Removal, Zinc, Products

Nouri, S. (2003), Effect of functional groups and pH on the affinity and adsorption capacity of activated carbon: Comparison of homogeneous and binary langmuir model parameters. *Adsorption Science & Technology*, **21** (6), 511-524.

Full Text: [A\Ads Sci Tec21, 511.pdf](A/Ads%20Sci%20Tec21,%20511.pdf)

Abstract: The adsorption of p-nitrophenol (an electrolyte) and nitrobenzene (a non-electrolyte) on activated carbon was carried out at 301 K under controlled pH conditions. The experimental isotherms were fitted to the homogeneous Langmuir model and the binary Langmuir model. Variation of the model parameters with solution pH was studied. The fitted parameters obtained from the Langmuir equations (homogeneous and binary models) showed that both the maximum amount of solute adsorbed (Q(max)) and the adsorption affinity of the carbon (K-1) towards the electrolytic adsorbate exhibited the more significant decrease. Under pH conditions below the pK(a) value of p-nitrophenol (when the adsorbate existed in a molecular form), both the solubility of the adsorbate and the electron density of its aromatic ring were significant factors affected the extent of London dispersion interactions. At higher solution pH values, electrostatic forces had a significant impact on the extent of adsorption. The influence of pH must be considered in terms of its combined effect on the carbon surface and on the solute molecules. It was confirmed that the uptake of the molecular forms of the aromatic solutes was dependent on the substituents attached to the aromatic ring. The adsorption of p-nitrophenol at higher pH values depended on the concentration of the anionic form of the solute present in the aqueous solution.

Keywords: Aromatic- Compounds, Charcoal, Dilute Aqueous-Solution, Isotherm, Salts, Systems, Weak Organic Electrolytes

Tang, Y.Z., Gin, K.Y.H. and Aziz, M.A. (2003), The relationship between pH and heavy metal ion sorption by algal biomass. *Adsorption Science & Technology*, **21** (6), 525-537.

Full Text: [A\Ads Sci Tec21, 525.pdf](A/Ads%20Sci%20Tec21,%20525.pdf)

Abstract: The relationship between pH and heavy metal ion sorption by the biomass of two algal species was studied under controlled experimental conditions. It was observed that increasing heavy metal ion sorption by algal biomass with pH mainly arose from a change in algal cell properties, provided that the pH was below the level where the heavy metal ions started to precipitate. A drastic increase in metal ion sorption capacity (‘inflection point’) was observed at pH 4.5 for the algal biomass used in the study.

All the experimental observations on the mutual effects between pH and metal sorption for four heavy metal ions (Cd2+, Cu2+, Pb2+ and Zn2+) and two algal species suggested that the mutual effects between pH and heavy metal ion sorption can be explained in terms of ion exchange and coulombic attraction between the heavy metal ions and the algal biomass. A ‘positive feedback’ was also suggested for the mutual effects between pH and heavy metal ion removal at higher initial pH levels, where the sorption of heavy metal ions may enhance their hydrolysis.

Keywords: Chlorella-Vulgaris, Sargassum Biomass, Marine-Algae, Biosorption, Cadmium, Adsorption, Protons, Exchange, Cyanobacteria, Accumulation

? Terzyk, A.P. (2003), Adsorption of biologically active compounds from aqueous solutions on to commercial unmodified activated carbons. Part V. The mechanism of the physical and chemical adsorption of phenol. *Adsorption Science & Technology*, **21** (6), 539-585.

Full Text: [2003\Ads Sci Tec21, 539.pdf](2003/Ads%20Sci%20Tec21,%20539.pdf)

Abstract: The study presented described the influence of temperature as well as pH on phenol adsorption (and the adsorption kinetics) on to three unmodified commercial carbons. The first section of the paper provided a description of the characterization of the carbons employing the most sophisticated method of carbon porosity characterization at present available, i.e. the method of Do and co-workers (the ND method). It was then shown that the ND method leads to the same results as the Density Functional Theory (DFT). The TPD results for D43/1, WD and AHD carbons were then presented and discussed with deconvolution of the peaks being performed. The results obtained together with those already published led to an assignment of the chemical structures of the surface functionalities for all the carbons studied. Thermogravimetric analysis of phenol adsorption indicated that the number of molecules bonded chemically was small. Adsorption of phenol under acidic conditions (pH 1.5) was lower than at neutral pH for all the carbons studied. A description of the corresponding isotherms applying adsorbability, quasi-Freundlich and DA models, together with enthalpy measurements, led to a mechanism for the adsorption of phenol at both pH values. This mechanism was further confirmed by some empirical correlations and by a comparison with data obtained recently for modified chemically carbons. Some new correlations between the properties of the carbon surface and the constants characterizing the process of phenol adsorption suggested recently were extended from data which had been measured for six carbons initially. Analysis of the average hysteresis on the adsorption/desorption isotherms, as well as a comparison of phenol adsorption under oxic and anoxic conditions, led to a mechanism for the irreversible adsorption of phenol. It was suggested that such irreversibility resulted from two effects: the creation of strong complexes between the phenol molecule and surface carbonyl and lactone groups, as well as polymerization. The latter effect arose from the ability of carbon to adsorb oxygen from solution and form superoxo ions. A mechanism for such polymerization was proposed. Finally, the kinetics of the process were considered. The diffusion coefficients were calculated from an application of the analytical solution of Fick’s law of diffusion for adsorption in cylindrical particles. It was shown that phenol diffusion occurs via a mixed process involving the carbon surface and pores. The diffusion energy obtained was correlated with the values for the physicochemical parameters of the carbons studied. It was concluded that the mechanism of phenol adsorption was determined not only by so-called ‘pi-pi interactions’ and, donor-acceptor complex’ formation, but also by a ‘solvent effect’ balancing the influence of the two above-mentioned factors, this solvent effect being strongly dependent on the temperature.

Keywords: 4-Hydroxyacetanilide Paracetamol, Activated Carbons, Adsorption, Adsorption Kinetics, Analysis, Aqueous Solutions, Carbon, Characterization, Coalification Processes, Comparison, Correlations, Cylindrical Adsorbent Particles, Deconvolution, Density-Functional Theory, DFT, Diffusion, Diffusion-Coefficient, Electron-Spin-Resonance, Enthalpy, First, Isotherms, Kinetics, Law, Mechanism, Models, ND Method, Neutral pH, Paracetamol In-Vitro, Particles, pH, Phenol, Polymerization, Pore-Size Distribution, Porosity, Small, Solution, Temperature, Temperature-Dependence

Banat, F., Al-Asheh, S. and Makhadmeh, L. (2003), Preparation and examination of activated carbons from date pits impregnated with potassium hydroxide for the removal of Methylene blue from aqueous solutions. *Adsorption Science & Technology*, **21** (6), 597-606.

Full Text: [A\Ads Sci Tec21, 597.pdf](A/Ads%20Sci%20Tec21,%20597.pdf)

Abstract: The effect of chemical activation on the adsorption capacity of raw date pits towards the basic dye Methylene Blue (MB) was investigated. The raw material was impregnated with 30 wt% KOH solution followed by carbonization at 600degreesC for 2 h and activation with CO2 at 800degreesC for 1 h. The adsorption capacity increased from 80.3 mg/g to 123.1 mg/g upon chemical activation. Three simplified models including the pseudo-first-order, pseudo-second-order and intraparticle diffusion models were used to test the adsorption kinetics. The rates of adsorption were found to conform to pseudo-second-order kinetics with high correlation. The equilibrium results for MB adsorption on the activated carbon obtained from date pits were well fitted by the Langmuir isotherm equation.

Keywords: Oil-Palm-Stone, Adsorption, Dyes, Sorption, Water

Tao, Z.Y. and Chu, T.W. (2003), Points of zero charge and potentiometric titrations. *Adsorption Science & Technology*, **21** (6), 607-616.

Full Text: [A\Ads Sci Tec21, 607.pdf](A/Ads%20Sci%20Tec21,%20607.pdf)

Abstract: Based on the various categories of surface charge and the definitions of points of zero charge proposed by Sposito (1984, 1998), the determination of the adsorbed proton charge (sigma(H)) and the point of zero net charge (PZNPC) of insoluble oxides and layer silicates in aqueous solution was examined in detail using potentiometric titration experiments. The confusion, various interpretations and difficulties associated with points of zero charge, including the point of zero net proton charge (PZNPC), the point of zero net charge (PZNC) and the point of zero charge (PZC), were discussed and clarified. The importance of comparing potentiometric titration curves for pure insoluble oxides in the presence and absence of specific adsorption and of layer silicates with a permanent negative charge was emphasized. The dependency of expressions of points of zero charge on the model assumed and the weakness of the method of potentiometric titrations widely used for the determination of points of zero charge were discussed.

Keywords: Triple-Layer Model, Adsorption, Interface, Ions, Alumina, H+, OH

Say, R., Yimaz, N. and Denizli, A. (2003), Removal of heavy metal ions using the fungus *Penicillium canescens*. *Adsorption Science & Technology*, **21** (7), 643-650.

Full Text: [A\Ads Sci Tec21, 643.pdf](A/Ads%20Sci%20Tec21,%20643.pdf)

Abstract: The potential use of the fungus *Penicillium canescens* for the removal of cadmium, lead, mercury and arsenic ions from aqueous solutions was evaluated in this study. Equilibrium biosorption of the heavy metal ions was attained in 4 h. The binding of heavy metal ions to P. canescens was clearly pH-dependent. Under acidic conditions, the heavy metal ion loading capacity increased with increasing pH, presumably as a result of heavy metal speciation and competition with hydrogen ions for the same binding sites. The adsorption of heavy metal ions attained a plateau value at ca. pH 5.0. The maximum adsorption capacities of the heavy metal ions studied onto the fungal biomass under non-competitive conditions were 26.4 mg/g for As(III), 54.8 mg/g for Hg(II), 102.7 mg/g for Cd(II) and 213.2 mg/g for Pb(II), respectively. The competitive adsorption capacities of the heavy metal ions were 2.0 mg/g for As(III), 5.8 mg/g for Hg(II), 11.7 mg/g for Cd(II) and 32.1 mg/g for Pb(II), respectively, at a 50-mg/l initial concentration of the metal ions. The same affinity order was observed under non-competitive and competitive adsorption conditions, i.e. Pb(II) > Cd(II) > Hg(II) > As(III). The equilibrium loading capacity of Pb(II) was greater than that of other metal ions, the fungal biomass showing preference towards the binding of Pb(II) over Cd(II), Hg(II) and As(III). Elution of heavy metal ions was performed using 0.5 M HCl. The fungus *Penicillium canescens* could be used for biosorption over six cycles.

Keywords: *Phanerochaete-Chrysosporium*, *Saccharomyces-Cerevisiae*, *Zoogloea-Ramigera*, *Aspergillus-Niger*, *Rhizopus-Arrhizus*, Aqueous-Solution, Biosorption, Adsorption, Biomass, Mercury

Ekici, S., Işikver, Y., Şahiner, N. and Saraydin, D. (2003), Adsorption of some textile dyes onto crosslinked poly(N-vinylpyrrolidone). *Adsorption Science & Technology*, **21** (7), 651-659.

Full Text: [A\Ads Sci Tec21, 651.pdf](A/Ads%20Sci%20Tec21,%20651.pdf)

Abstract: The adsorption of some textile dyes such as Indigosol Blau IBC, Iyozol Turkish G, Iyozol Black B, Remazol Brilliant Orange 3R, Remazol Brilliant Violet 5R, Remazol Blau 3R, Sumufix Red 3BF and Everzol Yellow 4GL with crosslinked poly(N-vinylpyrrolidone) was investigated. Adsorption of these textile dyes onto crosslinked poly(N-vinylpyrrolidone) was studied by batch adsorption techniques at 25degreesC. The adsorption isotherms obtained were L-type (Langmuir-type) according to the Giles classification system. Adsorption studies indicated that monolayer coverage of the crosslinked poly(N-vinylpyrrolidone) by the dyes studied increased in the order: Indigosol Blau IBC > Iyozol Turkish G > Sumufix Red 3BF > Iyozol Black B > Remazol Brilliant Orange 3R > Remazol Blau 3R > Everzol Yellow 4GL > Remazol Brilliant Violet 5R. Values of the removal efficiency of the dyes ranged from 21% to 81%.

Keywords: Cationic Dyes, Polyvinyl Pyrrolidone, General Treatment, Aqueous-Solutions, Acid Hydrogels, Binding, Classification, Isotherms, Behavior

Ziółkowska, D. (2003), Theoretical description of adsorption from binary liquid non- electrolyte solutions with unlimited component miscibility on to microporous solids. *Adsorption Science & Technology*, **21** (7), 661-668.

Full Text: [A\Ads Sci Tec21, 661.pdf](A/Ads%20Sci%20Tec21,%20661.pdf)

Abstract: The ‘solution’ analogues of four single-gas adsorption isotherms [i.e. the Langmuir-Freundlich (LF), the generalized Langmuir (GL), the Toth (T) and the LF-GL equations] were examined. The derived expressions were applied to the description of the experimental adsorption data relating to the sorption of a binary liquid solution containing components of unlimited Miscibility on to microporous solids. Optimization of the equation parameters, as well as a comparison of the results obtained with those determined earlier for sorption in systems where the components were of limited miscibility, was undertaken.

Keywords: Activated Carbon, Dubinin-Radushkevich, Equations, Freundlich, Miscible Organic Liquids, Mixtures, Potential Theory, Water Solution

Benderdouche, N., Bestani, B., Benstaali, B. and Derriche, Z. (2003), Enhancement of the adsorptive properties of a desert Salsola Vermiculata species. *Adsorption Science & Technology*, **21** (8), 739-750.

Full Text: [A\Ads Sci Tec21, 739.pdf](A/Ads%20Sci%20Tec21,%20739.pdf)

Abstract: Heat pretreatment, steam activation and 20% phosphoric acid activation were found to enhance the adsorption capacity of a desert Salsola Vermiculata plant species significantly relative to the inactivated plant and powdered wood carbon 600200 EX 694 as obtained from Belgium. The batch adsorption experiments resulted in a maximum adsorption capacity determined from Langmuir models of up to 476 mg, g for acetic acid, 238 mg, g for copper(II) ions and 144 mg, g for nickel(II) ions, whereas for the inactivated plant they attained values of 53 mg, g, 65 mg, g and 18 mg, g, respectively. The results for the wood carbon were 65 mg, g for acetic acid, 45 mg, g for copper(II) ions and 2.4 mg, g for nickel(II) ions. The Freundlich model was found to provide a better description of copper(II) ion adsorption onto the steam- and chemically-activated plant, whereas nickel(II) ion adsorption processes followed Langmuir behaviour. These results showed that the activated plant could prove to be very useful in removing toxic substances from wastewater.

Keywords: Adsorption, Langmuir, Metal-Ions, Removal, Wood

Zhang, A.Y., Uchiyama, G. and Asakura, T. (2003), Dynamic-state adsorption and elution behaviour of uranium(VI) ions from seawater by a fibrous and porous adsorbent containing amidoxime chelating functional groups. *Adsorption Science & Technology*, **21** (8), 761-773.

Full Text: [A\Ads Sci Tec21, 761.pdf](A/Ads%20Sci%20Tec21,%20761.pdf)

Abstract: To develop an advanced recovery process of uranium from sea-water using a macroporous fibrous polymeric material containing amidoxime chelating functional groups (FPAO), the static- and dynamic-state adsorption behaviours of U(VI) ions onto a new type of FPAO were investigated at pH 6.0. It was found that the flow rate and the column specification had a distinct influence on the adsorption of U(VI) ions onto FPAO. When the flow rate was varied from 0.95 ml/min to 3.75 ml/min, the amount of U(VI) ions adsorbed decreased from 379.3 mg/g to 340.6 mg/g while the corresponding equilibrium time diminished from 41.2 h to 10 h. When two types of column of different diameter (Phi) and height (h) were employed, viz. Phi 9.4 mm x h 525 mm and Phi 15.5 mm×h 290 mm, the amounts of U(VI) ions adsorbed and the corresponding equilibrium times were 340.6 mg/g and 10 h and 325.9 mg/g and 13.6 h, respectively, at a constant flow rate of 3.70 ml/min. The use of hydrochloric acid as an eluant for U(VI) ions was also examined by varying its concentration, elution flow rate and the column dimensions. Hydrochloric acid eluted U(VI) ions effectively from the loaded FPAO when employed in the concentration range 0.5-1.0 M. The percentage recovery of U(VI) ions calculated under all elution conditions was greater than 99%.

Keywords: Fiber Adsorbent, Sea-Water, Recovery, Polymer, Bed

Müftüoglu, A.E., Karakelle, B., Ergin, M., Erkol, A.Y. and Yilmaz, F. (2003), The removal of Basic Blue 41 dye from aqueous solutions by bituminous shale. *Adsorption Science & Technology*, **21** (8), 751-760.

Full Text: [A\Ads Sci Tec21, 751.pdf](A/Ads%20Sci%20Tec21,%20751.pdf)

Abstract: The removal of Basic Blue 41 dye from aqueous solutions was investigated using bituminous shale as an adsorbent. The parameters studied in batch experiments were the effect of contact time, temperature, particle size and adsorbate concentration. The adsorption was found to follow a first-order process. Equilibrium adsorption data were obtained at three different temperatures, i.e. 25degreesC, 40degreesC and 50degreesC, and with particle sizes corresponding to the following meshes: 45-120, 120-230, 230-325 and 325-400. The resulting experimental equilibrium data were well represented by the Langmuir isotherm. It was found that the smaller the particle size, the higher the adsorption. The adsorption capacity increased with temperature.

Keywords: Activated Carbon, Adsorbents, Adsorption, Biogas Waste Slurry, Color Removal, Disperse Dye, Fly-Ash, Sunflower Stalks, Textile Effluents, Water

Hasar, H., Cuci, Y., Obek, E. and Dilekoglu, M.F. (2003), Removal of zinc(II) by activated carbon prepared from almond husks under different conditions. *Adsorption Science & Technology*, **21** (9), 799-808.

Full Text: [A\Ads Sci Tec21, 799.pdf](A/Ads%20Sci%20Tec21,%20799.pdf)

Abstract: Activated carbon was prepared from almond husks by activation at different temperatures in the absence (MAC-I) and presence (MAC-II) of H2SO4. The ability of the activated carbon to remove zinc(II) ions by adsorption from aqueous solutions was investigated, varying several conditions such as pH, the carbonisation temperature of the husk, the initial concentration of metal ions, the contact time and the adsorbent concentration. The optimum conditions were found to be a pH value of 5.5, a carbonisation temperature of 700degreesC, a contact time of 60 min and an adsorbent concentration of 4 g/l. The results obtained indicated that effective uptake of Zn(II) ions was achieved when the carbon prepared by heating almond husks at 700degreesC was activated by the addition of H2SO4. A 92% removal of Zn(II) ions was achieved at an initial concentration of 20 mg/l and an adsorbent concentration of 4 g/l. When the adsorbent concentration was increased to 40 g/l, the adsorption density decreased from 4.5 mg/g to 0.47 mg/g for MAC-II. The Langmuir and Freundlich constants were both calculated, and the data found to be fitted reasonably well by the Langmuir isotherm. The adsorption capacities for MAC-I and MAC-II as calculated from the Langmuir isotherm were 30.864 mg/g and 35.336 mg/g, respectively.

Keywords: Aqueous-Solution, Waste-Water, Toxic Metals, Coconut Husk, Adsorption, Copper, Sorption, Cadmium, Moss, Peat

? Wang, Y.B. and Lin, S.H. (2003), A comparison of the adsorption of phenolic compounds from water in column systems containing XAD resins and modified clay. *Adsorption Science & Technology*, **21** (9), 849-861.

Full Text: [2003\Ads Sci Tec21, 849.pdf](2003/Ads%20Sci%20Tec21,%20849.pdf)

Abstract: A fixed bed for the sorption of phenol, m-nitrophenol (m-NP) and o-cresol employing cetyltrimethylammonium bromide (CTAB)-modified montmorillonite, XAD-4 or XAD-8 was examined both from a theoretical and experimental viewpoint. Experiments were performed using different feed flow rates, bed depths and feed sorbate concentrations. A theoretical model containing two parameters, tau and k, was proposed for describing the breakthrough curves. The two XADs and the CTAB-clay system were compared to clarify the characteristics of the adsorption mechanism and application. For the XAD systems, the breakthrough point of phenol increased with increasing bed height at the same feed flow rate. However, the bed height had little effect on the value of k. For the CTAB-clay system, the values of tau for phenol decreased with increasing feed concentration under the conditions studied. In contrast, however, the values of k increased with increasing feed concentration. The adsorption capacity (Q(M)) of the phenolic compounds on the sorbents decreased in the order XAD-8 > XAD-4 > CTAB-clay. Although the surface area of XAD-4 was larger than that of XAD-8, the polarity of XAD-8 was greater than that of XAD-4. The adsorption rate constant k decreased in the order CTAB-clay > XAD-8 > XAD-4 for the same sorbate. For a given sorbent, the value of k decreased in the order phenol > m-NP > o-cresol.

Keywords: Adsorbents, Adsorption, Adsorption Rate, Aqueous-Solution, Biodegradation, Capacity, Clay, Concentration, Degradation, Flow, Mechanism, Model, Montmorillonite, Organic Contaminants, P-Nitrophenol, Parameters, Phenol, Phenolic Compounds, Rate Constant, Resins, Solid-Phase Extraction, Solvent-Extraction, Sorption, Surface Area, Water

Gonzo, E.E. (2003), Adsorption of organic compounds on activated carbon derived from peanut shells. Potential theory correlation for estimating adsorption capacities and affinity coefficients. *Adsorption Science & Technology*, **21** (10), 911-920.

Full Text: [A\Ads Sci Tec21, 911.pdf](A/Ads%20Sci%20Tec21,%20911.pdf)

Abstract: Adsorption isotherms of eight organic contaminants (acetone, pyridine, phenol, iodine, Methylene Blue, Congo Red, Reactive Navy and tannic acid) onto an activated carbon obtained from peanut shells have been studied at 22degreesC. The experimental data were analyzed using the Polanyi Potential Theory and the Dubinin-Astakhov equation and collapsed into one general characteristic curve. This analysis allowed the affinity coefficient for each organic compound to be obtained using phenol as the reference substance. A useful correlation for the calculation of the affinity coefficient as a function of relative parachor is presented.

Keywords: Aqueous-Solutions, Equation, Pore-Size Distribution, Volume

Wang, H.L., Chen, J.L., Li, A.M., Zhai, Z.C., Fei, Z.H. and Zhang, Q.X. (2003), Adsorption of aromatic compounds from aqueous solution by a hypercrosslinked polymeric adsorbent with sulphonic groups. *Adsorption Science & Technology*, **21** (10), 921-933.

Full Text: [A\Ads Sci Tec21, 921.pdf](A/Ads%20Sci%20Tec21,%20921.pdf)

Abstract: A hypercrosslinked polymeric adsorbent with sulphonic groups, NG-5, was employed to remove p-toluidine, p-aminophenol and phenol from aqueous solutions and its performance and thermodynamic behaviour compared to that of the hypercrosslinked polymeric adsorbent CHA-111 containing no functional groups. It was found that the equilibrium adsorption data for the three aromatic compounds could be well fitted by the Langmuir and Freundlich isotherms. The results showed that the equilibrium adsorption capacities for p-toluidine and p- aminophenol on NG-5 were all greater than on CHA-111. This may be attributed to the strong hydrogen-bonding interaction between the adsorbent and the adsorbate, electrostatic interaction and pi-pi interaction. However, the adsorption capacity for phenol on NG-5 was lower than that on CHA-111 because of the larger surface area and micropore volume of the latter adsorbent. The sorption enthalpy changes were used to interpret the adsorption mechanism. In addition, the sorption of p-toluidine and p-aminophenol onto NG-5 was studied kinetically. The results showed that the adsorption process was mainly controlled by intraparticle diffusion.

Keywords: Naphthalene Derivatives, Phenolic-Compounds, Sorbents

? Fadali, O.A. (2003), Effect of gas stirring on external mass transfer, intraparticle diffusion and energy consumption during adsorption. *Adsorption Science & Technology*, **21** (10), 935-950.

Full Text: [2003\Ads Sci Tec21, 935.pdf](2003/Ads%20Sci%20Tec21,%20935.pdf)

Abstract: Gas stirring was used to study the adsorption of basic dyes onto montiriorillonite clay. This technique had been demonstrated previously as being more efficient than mechanical stirring. The experimental set-Lip employed was a fixed-bed column connected to an air-supply system with provision for controlling different airflow rates at different temperatures. The dyestuff used was Basic Red (a commercial dye). The rate of dye removal was found to increase with increasing gas flow and increasing temperature. Dye removals of 86% to 55% could be achieved for contact times of 35 min to 50 min using dye concentrations between 200 mg/l and 500 mg/l at a gas flow rate of 100 cm3/s. The calculated Langmuir constants demonstrated that clay is a favourable adsorbent for the basic dye. Compared to powdered activated carbon (PAC), the adsorption capacity of the clay was 41.3% while the relative cost of basic dye removal was 0.024-times that of PAC. The external mass-transfer coefficient (K-s) and the intraparticle diffusion rate parameter (K-p) were calculated and evaluated as functions of gas stirring and temperature. It was found that an increase in the rate of adsorption effected by gas stirring was double that obtained by increasing, the temperature due to the high turbulence induced by axial and radial flow created by gas stirring. The activation energy (E) of 5.95 kcal/mol demonstrated that adsorption of the basic dye onto clay was diffusion-control led. The energy consumption (W) for removing a known percentage of the dye was evaluated and found to correlate with the equation W = 8.56Q(1.02)×(8.63) for 50 < Q < 100 cm3/s, where Q is the gas flow rate and X is the percentage dye removal.

Keywords: Activated Carbon, Adsorbent, Adsorption, Clay, Color, Dye, Dyes, Fixed Bed, Flow Rate, Langmuir, Natural Adsorbents, Reactors, Removal, Solid Fluidized-Bed

Demirbaş, E. (2003), Adsorption of cobalt(II) ions from aqueous solution onto activated carbon prepared from hazelnut shells. *Adsorption Science & Technology*, **21** (10), 951-963.

Full Text: [A\Ads Sci Tec21, 951.pdf](A/Ads%20Sci%20Tec21,%20951.pdf)

Abstract: Activated carbon prepared from hazelnut shells was used to remove Co(II) from aqueous solution by adsorption. Batch-mode adsorption experiments were carried Out varying parameters such as the initial metal ion concentration (13.30-45.55 mg/l), agitation speed (50-200 rpm), pH (2-8), temperature (293-323 K) and particle size (0.80-1.60 mm). The kinetics of the adsorption of Co(II) followed the pseudo-second-order equation, being pH-dependent since the removal rate increased with the pH value of the aqueous solution. The adsorption equilibrium data obeyed the Langmuir isotherm. The adsorption capacity (Q) calculated from the Langmuir isotherm was 13.88 mg Co(II)/g carbon at 303 K employing a pH value of 6 and a particle size of 1.00-1.20 mm. The thermodynamic parameters evaluated for the carbon revealed that the adsorption of Co(II) was endothermic in nature.

Keywords: Low-Cost Adsorbents, Waste-Water, Metal-Ions, By-Products, Removal, Equilibrium, Kinetics, Copper, Nickel, Sorption

Marouf-Khelifa, K., Khelifa, A., Belhakem, A., Marouf, R., Abdelmalek, F. and Addou, A. (2004), The adsorption of pentachlorophenol from aqueous solutions onto exchanged Al-MCM-41 materials. *Adsorption Science & Technology*, **22** (1), 1-12.

Full Text: [A\Ads Sci Tec22, 1.pdf](A/Ads%20Sci%20Tec22,%201.pdf)

Abstract: The ability of a mesoporous molecular sieve to adsorb chlorinated phenols was studied experimentally. Thus, the adsorption isotherms of pentachlorophenol (PCP) from aqueous solutions were measured on (M)Al-MCM-41 (M = Na+, K+, Cu2+, Cr3+) at intervals of 10 K between 303 K and 323 K. The experimental isotherms obtained were of the S-type in terms of the classification of Giles and co-workers. The best fit of the adsorption isotherm data was obtained using the Freundlich model. The adsorption affinity of PCP increased in the order (K)Al-MCM-41 < (Cr)Al-MCM-41 < (Na)Al-MCM-41 < (Cu)Al-MCM-41. At the same temperature, the adsorption of PCP on (Cu)Al-MCM-41 was more pronounced compared to its adsorption on alumina- pillared montmorillonite and mesoporous alumina aluminium phosphates. Analysis of the isosteric curves showed that (Cu)Al-MCM-41 and (Na)Al-MCM-41 presented a heterogeneous profile. In contrast, (K)Al-MCM-41 and (Cr)Al-MCM-41 did not exhibit energetic heterogeneity throughout the entire range of coverage.

Keywords: Activated Carbon, Chlorinated Phenols, Chlorophenols, Degradation, Desorption, Isotherms, Kinetics, MCM-41, Sorption, Zeolites

Liu, F.Q., Jinlong, C., Li, A.M., Fei, Z.H., Ge, J.J. and Zhang, Q.X. (2004), Equilibrium adsorption of single component and binary mixtures of aromatic compounds onto a polyfunctional hypercrosslinked polymeric adsorbent. *Adsorption Science & Technology*, **22** (1), 13-24.

Full Text: [A\Ads Sci Tec22, 13.pdf](A/Ads%20Sci%20Tec22,%2013.pdf)

Abstract: A polyfunctional hypercrosslinked polymeric adsorbent, LA-8, was synthesized and characterized. It was first used to investigate the adsorption properties of 1-amino-2-naphthol-4- sulphonic acid (1,2,4-acid), including the corresponding adsorption isotherms, thermodynamics and binary competitive adsorption with 2-naphthol. The Freundlich model gave good fits to both the single and binary adsorption isotherms, indicating an endothermic and favourable adsorption process. The positive value of DeltaH(0) for the single solute system was in the range of 30-60 kJ/mol showing the existence of integrated processes involving chemical interaction. The values of AGO demonstrated the spontaneous nature of the adsorption process while the value of DeltaS(0) showed increased randomness at the solid-solution interface, thereby indicating the presence of stoichiometric displacement. Both DeltaH(0) and DeltaS(0) appeared to vary linearly with increased solid loading, q(e). Pre-adsorbed 2-naphthol molecules supplied another adsorption site for 1, 2, 4-acid, despite the existence of an antagonistic interaction with 2-naphthol. In simultaneous processes, the mechanism for 1, 2, 4-acid adsorption probably mainly involved van der Waals forces and hydrogen-bonding interaction. Furthermore, the adsorption of a greater amount of 2-naphthol onto the solid phase demonstrated the occurrence of interaction between the tested binary solutes. It was concluded that direct competition for adsorption sites was the dominant competitive mechanism.

Keywords: Activated Carbon, Aqueous-Solution, Dyes, Naphthalene Derivatives, Organic-Compounds, Phenolic-Compounds, Removal, Separation, Simulation, Sorption

Nassar, M.M., Ewida, K.T., Ebrahiem, E.E., Magdy, Y.H. and Mheaedi, M.H. (2004), Adsorption of iron and manganese ions using low-cost materials as adsorbents. *Adsorption Science & Technology*, **22** (1), 25-37.

Full Text: [A\Ads Sci Tec22, 25.pdf](A/Ads%20Sci%20Tec22,%2025.pdf)

Abstract: The removal of toxic metal ions (iron and manganese) from aqueous solution by adsorption was studied. The batch process was used either to remove each metal ion singly or both metals as a multi-component system. The adsorbents used were low-cost materials, viz. palm fruit bunch and maize cob. The adsorption isotherms demonstrated that the adsorbents behaved in a favourable manner towards metal ion adsorption. The adsorption capacities for iron ions on palm fruit bunch and maize cob were in the 57-80% range and for the manganese ion in the 50-79% range for initial concentrations between 1 ppm and 10 ppm. With mixtures of both metal ions, removal of iron ions from the mixture was in the 54-79% range and for the manganese ion in the 54-76% range. The extended Langmuir model gave poor agreement with the data for the adsorption of mixtures of the two metal ions while the P-factor model yielded good agreement.

Keywords: Palm-Fruit Bunch, Activated Carbon, Aqueous-Solutions, Dyes, Equilibrium, Kinetics, Systems, Removal

Kobya, M. (2004), Adsorption, kinetic and equilibrium studies of Cr(VI) by hazelnut shell activated carbon. *Adsorption Science & Technology*, **22** (1), 51-64.

Full Text: [A\Ads Sci Tec22, 51.pdf](A/Ads%20Sci%20Tec22,%2051.pdf)

Abstract: The adsorption of chromium(VI) from aqueous solutions on to hazelnut shell activated carbon (HSAC) was investigated. The adsorption was carried out by varying parameters such as the agitation time, the initial solution pH, the initial Cr(VI) concentration and the temperature. The experimental data were well fitted by the pseudo-first-order kinetic model allowing the rate constants to be evaluated. The Langmuir isotherm provided the best correlation for the adsorption of Cr(VI) onto the activated carbon. The adsorption of Cr(VI) was pH-dependent. The adsorption capacity as calculated from the Langmuir isotherm was 170 mg/g at an initial pH of 1.0 for a Cr(VI) solution of 1000 mg/l concentration. Thermodynamic parameters were evaluated, indicating that the adsorption was endothermic and involved monolayer adsorption of Cr(VI).

Keywords: Industrial-Waste-Water, Low-Cost Adsorbents, Aqueous-Solution, Heavy-Metals, Removal, Chromium(VI), Slurry, Models, Ions

Jamode, A.V., Sapkal, V.S., Jamode, V.S. and Deshmukh, S.K. (2004), Adsorption kinetics of defluoridation using low-cost adsorbents. *Adsorption Science & Technology*, **22** (1), 65-73.

Full Text: [A\Ads Sci Tec22, 65.pdf](A/Ads%20Sci%20Tec22,%2065.pdf)

Abstract: Column kinetics for fluoride ion removal could be described more adequately by the Lobenstein model than by conventionally used models. This model can be used in a linearized form. Use of this model minimizes the error resulting from use of conventional models, especially at lower or higher time periods of the breakthrough curve.

Keywords: Fishbone Charcoal, Removal

Ahmad, A.L., Sumathi, S. and Hameed, B.H. (2004), Chitosan: A natural biopolymer for the adsorption of residue oil from oily wastewater. *Adsorption Science & Technology*, **22** (1), 75-88.

Full Text: [A\Ads Sci Tec22, 75.pdf](A/Ads%20Sci%20Tec22,%2075.pdf)

Abstract: Chitosan, poly-beta-(1,4)-2-acetamido-2-deoxy-D-glucose (N- deacetylated) was used as an adsorbent to adsorb the excess oil from oily wastewater. Chitosan is a biodegradable cationic biopolymer achieved by the extensive deacetylation of chitin obtained from prawn shell waste. Palm oil mill effluent (POME) is one of the major problematic oily waste-waters in Malaysia. Preliminary analysis showed that POME contains ca. 2000 mg/l residue oil. A bench-scale study of the adsorption by chitosan of residue oil in POME was conducted using a jar-test apparatus. Effects of experimental parameters such as the dosage of chitosan in powder and flake form, contact time, mixing rate, settling time and pH were studied in order to obtain the optimum conditions for the adsorption of residue oil from POME. The results obtained showed that chitosan powder, at a dosage of 0.5 g/l and employing a contact time of 15 min, a mixing rate of 100 rpm, sedimentation for 30 min and a pH value of 5.0, provided the most suitable conditions for the removal of residue oil from POME. The removal efficiencies obtained were ca. 97-99%. FT-IR spectra and SEM micrographs of chitosan before and after adsorption were presented to prove that the residue oil had been adsorbed by chitosan.

Keywords: Chitin, Coagulation, Dye, Removal

Agrawal, A. and Sahu, K.K. (2004), Adsorption kinetics for the removal of Co(II) and Zn(II) from wastewater by indion BSR: A chelating ion-exchange resin. *Adsorption Science & Technology*, **22** (2), 107-118.

Full Text: [A\Ads Sci Tec22, 107.pdf](A/Ads%20Sci%20Tec22,%20107.pdf)

Abstract: A comparative study on the adsorption of zinc(II) and cobalt(II) from aqueous solutions onto Indion BSR, an indigenous cation-exchange resin, was undertaken in the present work. Various parameters for the removal of Co(II) and Zn(II) such as the initial solution pH, contact time, resin and metal ion concentration were optimized. The equilibrium data obtained were well fitted by both the Langmuir adsorption isotherm at pH 6.0 for 500 mg resin and the Freundlich adsorption isotherm under optimum conditions of contact time and pH 5.0 for 250 mg resin at 30degreesC. The adsorption of Zn(II) and Co(II) on this cation-exchange resin followed first-order reaction kinetics. Film diffusion of Co(II) and Zn(II) in this ion-exchange resin was shown to be the main rate-limiting step over the concentration range studied. The studies showed that the resin could be used as an efficient adsorbent for the removal of Co(II) and Zn(II) from aqueous solutions.

Keywords: Activated Carbon, Cadmium, Lead

Abdulkarim, M. and Abu Al-Rub, F.A. (2004), Adsorption of lead ions from aqueous solution onto activated carbon and chemically-modified activated carbon prepared from date pits. *Adsorption Science & Technology*, **22** (2), 119-134.

Full Text: [A\Ads Sci Tec22, 119.pdf](A/Ads%20Sci%20Tec22,%20119.pdf)

Abstract: Date pits, i.e. agricultural wastes, were converted into activated carbon by air and phosphoric acid activation. The surfaces of some of the prepared activated carbons were modified chemically using 8-hydroxyquinoline. The carbons prepared by both air and phosphoric acid activation showed surface areas of 864.8 m2/g and 502.2 m2/g, respectively, and micropore volumes of 0.298 cm3/g and 0.126 cm3/g, respectively.

The adsorption of Methylene Blue onto the prepared activated carbon demonstrated its very high adsorption capacity. The adsorption of lead ions on both carbons, i.e. activated and chemically-modified, was studied under different conditions. The experimental results showed that both types of carbon gave a relatively large maximum lead ion uptake, the increase in the uptake as a result of chemical modification being insignificant. Lead ion uptake was found to increase by increasing the solution pH - whereby the maximum adsorption of lead ions was obtained at pH 5.2 - and by increasing the initial lead ion concentration. Equilibrium studies showed that the adsorption of lead ions on both adsorbents could be described by the Langmuir and Freundlich isotherm models. Kinetic studies showed that the adsorption of lead ions on the prepared activated carbons followed pseudo-second-order kinetics. The presence of EDTA, acetic acid or citric acid led to a significant decrease of lead ion uptake by the activated carbons.

Keywords: Acetic Acid, Acid Activation, Activated Carbon, Adsorbent, Adsorption, Air, Bagasse, Cadmium, Capacity, Carbon, Chemical, Chemical Modification, Concentration, Copper, EDTA, Equilibrium, Freundlich Isotherm, Heavy-Metals, Ion, Isotherm, Kinetics, Lead, Lead Ions, Models, pH, Removal, Surfaces, Uptake, Waste, Wastes, Zinc

Karabakan, A., Karabulut, S., Denizli, A. and Yürüm, Y. (2004), Removal of silver(I) from aqueous solutions with low-rank Turkish coals. *Adsorption Science & Technology*, **22** (2), 135-144.

Full Text: [A\Ads Sci Tec22, 135.pdf](A/Ads%20Sci%20Tec22,%20135.pdf)

Abstract: The removal of silver ions from aqueous solutions containing low-to-moderate levels of contamination using Turkish Beypazari low-rank coal was investigated. Carboxylic acid and phenolic hydroxyl functional groups present on the coal surface provided adsorption sites for the removal of silver ions from solution via ion exchange. The equilibrium pH of the coal/solution mixture was shown to be the principal factor controlling the extent of recovery of Ag+ ions from aqueous solutions. The optimum pH was measured as 4.0 and it was found that the maximum removal of silver from solution was achieved within 30 min. The maximum adsorption capacity of the Ag+ ions was 1.87 mg/g coal. The adsorption phenomena appeared to follow a typical Langmuir isotherm. It was observed that the use of low-rank coal was considerably more effective in the recovery Ag+ ions from aqueous solutions. Higher amounts of adsorbed Ag+ ions could be desorbed (up to 92%) using 25 mM EDTA. Low-rank Turkish coals were suitable for consecutive use for more than 10 cycles without significant loss of adsorption capacity.

Keywords: Industrial-Waste-Water, Activated Carbons, Amidoxime Groups, Metal-Ions, Adsorption, Mechanism, Recovery, Copper, Oxide

Yıldız, N., Erol, M., Aktas, Z. and Çalımlı, A. (2004), Adsorption of aromatic hydrocarbons on BTEA-bentonites. *Adsorption Science & Technology*, **22** (2), 145-154.

Full Text: [A\Ads Sci Tec22, 145.pdf](A/Ads%20Sci%20Tec22,%20145.pdf)

Abstract: Organobentonites were synthesized using benzyltrimethylammonium bromide (BTEA) with five different exchange degrees. At low concentrations, the amounts of BTEA exchanged did not reach the value of the cation-exchange capacity (CEC) of the bentonite. To obtain full displacement, it was necessary to add an amount of BTEA four-times greater than the CEC. Synthesized organobentonites were characterized by X-ray diffraction, particle-size analysis and infrared spectroscopy. The basal spacings of the organobentonites increased slightly with increasing amounts of BTEA cations. Particle-size analyses of the original bentonite and organobentonites showed that the organobentonites contained a greater number of coarse particles than present in the original bentonite. Toluene and xylenes were used as solutes to determine the adsorption properties of the BTEA-bentonites. The 4BTEA-bentonite was evaluated as an adsorbent of water-soluble aromatic hydrocarbons including toluene and xylenes.

Keywords: Benzene, Clays, Organic-Compounds, Organobentonites, Phenol, Smectites, Sorption Characteristics, Toluene, Water, Xylene

Abu Al-Rub, F.A. (2004), Sorption of lead ions from simulated industrial wastewater onto Jordanian low-grade phosphate. *Adsorption Science & Technology*, **22** (2), 165-179.

Full Text: [A\Ads Sci Tec22, 165.pdf](A/Ads%20Sci%20Tec22,%20165.pdf)

Abstract: The technical feasibility of using Jordanian low-grade phosphate (JLGP) for the removal of lead ions from aqueous solutions was investigated in this study. To simulate real industrial wastewaters, the effects of the presence of ethylenediaminetetraacetic acid (EDTA), citric acid, tartaric acid or sodium chloride on the adsorption of lead ions on JLGP were also investigated.

The results of batch adsorption experiments demonstrated the high capability of JLGP for removing lead ions from aqueous solutions. The equilibrium data for the adsorption of lead ions onto JLGP could be fitted by the Langmuir, Freundlich, Temkin and Dubinin-Radushkevich (D-R) isotherm equations. The work presented showed that on using 1 mmol/l of an aqueous solution of any of Pb(II), Pb-NaCl, Pb-tartaric acid, Pb-EDTA or Pb-citric acid, the percentage removal of lead ions at equilibrium was in the order Pb(II) > Pb-NaCl > Pb-tartaric acid > Pb-citric acid > Pb-EDTA. Increasing the initial pH of the solution led to an enhancement in the sorption of lead ions and lead-ligand complexes onto JLGP. It was also found that increasing the concentration ratio of ligand to metal ion decreased the percentage removal of lead ions significantly. The sorption of lead ions from industrially simulated wastewater was found to follow pseudo-second-order kinetics.

Keywords: Heavy-Metals, Chelating-Agents, Arsenic Removal, Adsorption, Equilibrium, Adsorbent, Copper, Biosorption, Isotherm, Biomass

Rashwan, W.E. and Girgis, B.S. (2004), Adsorption capacities of activated carbons derived from rice straw and water hyacinth in the removal of organic pollutants from water. *Adsorption Science & Technology*, **22** (3), 181-194.

Full Text: [A\Ads Sci Tec22, 181.pdf](A/Ads%20Sci%20Tec22,%20181.pdf)

Abstract: Two activated carbons were prepared from unconventional raw materials, i.e. rice straw (RS) and water hyacinth (WH), using the same activation scheme, i.e. impregnation with 50 vol% H3PO4 followed by pyrolysis at 500degreesC. The porosity characteristics of the samples were determined via nitrogen adsorption studies at -196degreesC from which the various parameters were evaluated. WH carbon showed a more developed porosity relative to RS, although both carbons were apparently of low quality. The capacities of both samples towards the removal from aqueous solution of five organic sorbates were tested. These were phenol (P), p-nitrophenol (PNP), p-nitroaniline (PNA), Methylene Blue (MB) and Congo Red (CR). The adsorption of the two dyes (MB and CR) was a function of the pore dimensions, whereas phenol uptake was greatly reduced because of the acidic oxygen functional groups on the carbon surface. The amount of PNP taken up corresponded exactly with the specific surface area as estimated from nitrogen isotherm measurements. The surface abundances (as mumol/m2) of PNP, P and PNA were found to be independent of the porosity characteristics of the active carbon and followed the general sequence PNP > P > PNA > MB > CR. The observed removal capacities were comparable to that of a commercial carbon. produced by Prolabo whose porosity was much more developed.

Keywords: Phosphoric-Acid, Lignocellulosic Materials, Microporous Carbons, Porosity, Isotherms

Sciban, M. and Klasnja, M. (2004), Study of the adsorption of copper(II) ions from water onto wood sawdust, pulp and lignin. *Adsorption Science & Technology*, **22** (3), 195-206.

Full Text: [A\Ads Sci Tec22, 195.pdf](A/Ads%20Sci%20Tec22,%20195.pdf)

Abstract: The adsorption of copper(II) ions from aqueous solution onto sawdusts from different kinds of wood, pulp and Kraft lignin has been studied. The results of batch studies showed that Kraft lignin was a good adsorbent over the whole concentration range studied, hard woods (oak and black locust) were good when the Cu(II) ion concentration in the aqueous solution was high, while soft woods (poplar, willow, fir) and pulp were good for the adsorption of Cu(II) ions when the latter were present over the low concentration range. The maximum adsorption capacities of the adsorbents investigated towards Cu(II) ions were in the 1.77-9.35 mg/g range. Isotherms were used to obtain the corresponding thermodynamic parameters. Almost complete Cu(II) ion desorption was achieved using 0.1 M mineral acid solutions. The regenerated adsorbents could be used in several adsorption/desorption cycles.

Keywords: Adsorption, Algae, Aqueous-Solution, Cadmium, Heavy-Metal Ions, Peat, Pine Bark, Removal, Sorption, Waste-Water, Wood

Kadirvelu, K., Kanmani, P., Senthilkumar, P. and Subburam, V. (2004), Separation of mercury(II) from aqueous solution by adsorption onto an activated carbon prepared from *Eichhornia crassipes*. *Adsorption Science & Technology*, **22** (3), 207-222.

Full Text: [A\Ads Sci Tec22, 207.pdf](A/Ads%20Sci%20Tec22,%20207.pdf)

Abstract: The adsorption of mercury(II) from aqueous solutions onto an activated carbon derived from Eichhornia crassipes (AEC) was investigated under varying conditions of agitation time, metal ion concentration, adsorbent dose and pH to assess the kinetic and equilibrium parameters. Adsorption equilibrium was attained in 200, 310, 360 and 360 min for 10, 20, 30 and 40 mg/l Hg(II) concentrations. The first- and second-order adsorption rate constants were calculated and the experimental equilibrium adsorption capacities (q(e)) for different initial Hg(II) concentrations were reported. Adsorption was dependent on the solution pH, the Hg(II) concentration, the carbon concentration and the contact time. Both the Freundlich and Langmuir adsorption isotherm models fitted the experimental data well. The adsorption capacity was found to be 28.4 mg/g at pH 5 for a particle size of 125-180 mum. The adsorption capacity of the carbon produced met commercial conditions and was found to be superior to that of many other adsorbents. The percentage removal increased as the pH value of the solution was increased from 2 to 5 and then remained constant up to a pH value of 10. Desorption studies were performed with dilute hydrochloric acid and potassium iodide (KI) solutions.

Keywords: Activated Carbon, Adsorbent, Adsorbent Dose, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Isotherm Models, Agitation, Aqueous Solution, Aqueous Solutions, Capacity, Carbon, Desorption, Equilibrium, Experimental, First, Freundlich, Hg(II), Isotherm, Kinetic, Langmuir, Mercury(II), Metal, Metals, Models, Particle Size, pH, Rate Constants, Removal, Second-Order, Size, Solution, Sorption, Waste-Water

Zeatoun, L. and Yousef, S. (2004), The use of activated and non-activated tar sands as adsorbents for copper ion removal. *Adsorption Science & Technology*, **22** (3), 223-235.

Full Text: [A\Ads Sci Tec22, 223.pdf](A/Ads%20Sci%20Tec22,%20223.pdf)

Abstract: Jordanian tar sands were used as an adsorbent for the removal of copper ions from aqueous solutions. Experimental results showed that the adsorption of Cu2+ ions onto tar sands was pH- and temperature-dependent. Copper ion uptake increased with increasing pH, temperature and initial adsorbate concentration, but decreased with adsorbent concentration. An increase of ca. 40% in the uptake was noted when the tar sands were activated physically with CO2. The presence of NaCl salt in the adsorption process influenced the uptake of Cu2+ ions by the adsorbent studied. The adsorption process was very fast with equilibrium being achieved in about 2 min. The experimental data were well represented by both the Langmuir and Freundlich isotherm models.

Keywords: Adsorption, Zinc

Romero, L.C., Bonomo, A. and Gonzo, E.E. (2004), Peanut shell activated carbon: Adsorption capacities for copper(II), zinc(II), nickel(II) and chromium(VI) ions from aqueous solutions. *Adsorption Science & Technology*, **22** (3), 237-243.

Full Text: [A\Ads Sci Tec22, 237.pdf](A/Ads%20Sci%20Tec22,%20237.pdf)

Abstract: The adsorption of copper(II), zinc(II), nickel(II) and chromium(VI) ions from aqueous solutions onto an activated carbon produced from peanut shell was studied as a function of the concentration of the ions and the pH value. The amounts of Cu(II), Zn(II) and Ni(II) ions adsorbed increased with increasing equilibrium pH of the solution, while the uptake of Cr(VI) ions decreased. For Cr(VI) ions, maximum uptakes were found at a pH below the point of zero charge of the adsorbent (pH(pzc)). The amount of metal cation adsorbed at a given equilibrium concentration increased in the order Ni(II) < Zn(II) < Cu(II). This metal ion uptake order may be explained from a consideration of the combined effects of the electronegativity of the metal ion and the first stability constant of the corresponding metal hydroxide. The activated carbon produced from peanut shell was an effective and economic adsorbent for the removal of metal cations at pH > pH(pzc) and anions at pH less than or equal to pH(pzc).

Keywords: Kinetics, Pecan Shells, Removal, Single, Solutes

Guiza, S., Bagane, M., Al-Soudani, A.H. and Ben Amore, H. (2004), Adsorption of basic dyes onto natural clay. *Adsorption Science & Technology*, **22** (3), 245-255.

Full Text: [A\Ads Sci Tec22, 245.pdf](A/Ads%20Sci%20Tec22,%20245.pdf)

Abstract: The adsorption ability of natural clay towards the removal of basic dyes from aqueous textile solutions was investigated. The equilibrium isotherms were measured and analyzed using the Langmuir model and the experimental results compared with the theoretical data. The adsorbent exhibited considerable adsorption capacities of 567, 526, 427 and 300 mg/g towards Neutral Red, Methyl Violet, Methyl Green and Methylene Blue, respectively. Thus, the clay may be used as a cost-effective industrial adsorbent for the removal of basic dyes from industrial effluents.

Keywords: Activated Carbon, Adsorption, Aqueous-Solution, Cationic Dyes, Equilibrium, Green, Methylene-Blue, Removal, Surface, Textile Effluents, Violet

Goel, J., Kadirvelu, K. and Rajagopal, C. (2004), Competitive sorption of Cu(II), Pb(II) and Hg(II) ions from aqueous solution using coconut shell-based activated carbon. *Adsorption Science & Technology*, **22** (3), 257-273.

Full Text: [A\Ads Sci Tec22, 257.pdf](A/Ads%20Sci%20Tec22,%20257.pdf)

Abstract: Many adsorbents have been studied for their adsorption properties towards one-component metal ion solutions. However, if these materials are to be used for treating wastewater, their performance has to be determined in multi-component solutions. In the present work, multi-component metal sorption by coconut shell-based activated carbon has been studied using single, binary and ternary systems composed of Cu(II), Pb(II) and Hg(II) ions. The influence of solution pH was also demonstrated.

A set of desorption studies was also performed for the same metal ions with the aim of investigating the mechanism involved. It was found that chemisorption, surface chelation and complexation might be a possible metal ion removal mechanism. Scanning electron micrographs (SEM) and the EDAX spectrum of the activated carbon surface before and after equilibration of the adsorbent with the metal ion solution clearly showed the presence of Cu(II), Pb(II) and Hg(II) ions. An attempt was made to quantify the interaction behaviour of the metal ion on the adsorbent and to correlate such observations with the chemical and physical properties of the metal ions.

The ability of isotherm models such as those of Freundlich and Langmuir to predict the equilibrium uptake of Cu(II), Pb(II) and Hg(II) ions from one-component, binary and ternary systems was also tested. Both the Langmuir and Freundlich models were found to fit the experimental data well. The applicability of the extended Langmuir model was also evaluated for multi-component systems.

Keywords: Adsorption, Removal, Equilibrium, Biosorption, Coirpith, Kinetics, Cloths, Metals, Water

Singh, B.K. and Nayak, P.S. (2004), Sorption equilibrium studies of toxic nitro-substituted phenols on fly ash. *Adsorption Science & Technology*, **22** (4), 295-309.

Full Text: [A\Ads Sci Tec22, 295.pdf](A/Ads%20Sci%20Tec22,%20295.pdf)

Abstract: The potential of fly ash, a low cost and abundantly available material with good sorption properties, for removing phenols was investigated. Nitro-substituted phenols, i.e. o-nitrophenol, m-nitrophenol and p-nitrophenol, were selected for the studies. The effect of various factors such as adsorbent particle size, pH, phenol concentration and temperature on the sorption capacity was investigated. The removal of nitro-substituted phenols increased with decreasing adsorbent particle size, pH and increasing concentration and temperature. Langmuir adsorption isotherm constants were calculated and it was shown that the adsorption data for phenols onto fly ash fitted the Langmuir model well. The adsorption of the nitrophenols studied followed first-order rate kinetics. Thermodynamic studies were also undertaken and the values of the standard free energy (DeltaG(0)), enthalpy (DeltaH(0)) and entropy (DeltaS(0)) changes calculated.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Isotherm, Aqueous-Solutions, Bacteria, Biodegradation, Capacity, Changes, Cost, Degradation, Enthalpy, Entropy, Equilibrium, Equilibrium Studies, Fly Ash, Isotherm, Kinetics, Langmuir, Langmuir Model, Model, Nitrophenols, Ozonation, Particle Size, pH, Phenol, Phenols, Phosphate Removal, Potential, Rate Kinetics, Removal, Size, Sorption, Sorption Capacity, Standard, Temperature, Thermodynamic, Water

Öztop, H.N., Saraydin, D., Şolpan, D. and Güven, O. (2004), Adsorption of bovine serum albumin onto radiation-crosslinked poly(acrylamide/acrylic acid). *Adsorption Science & Technology*, **22** (4), 311-325.

Full Text: [A\Ads Sci Tec22, 311.pdf](A/Ads%20Sci%20Tec22,%20311.pdf)

Abstract: Poly(acrylamide/acrylic acid) (AAm/AAc) hydrogels were prepared at initial acrylic acid compositions of 70, 80 and 85 mol%, respectively. Mixtures of AAm and AAc monomers were irradiated in a Co-60 gamma-ray source at a dosage of 8 kGy. These hydrogels were used in experiments associated with the swelling, diffusion and adsorption of bovine serum albumin (BSA) from aqueous solution. The data obtained allowed the swelling and diffusion parameters for the hydrogels to be calculated. In the BSA adsorption experiments, the adsorption kinetics together with the influence of the pH of the medium, the initial BSA concentration and the composition of the hydrogels on the adsorption efficiency of the AAm/AAc hydrogels were all studied.

The rates of BSA adsorption were found to conform to pseudo-first-order kinetics and a kinetic model was used to calculate the corresponding rate constant for the adsorption processes. The adsorption of BSA onto AAm/AAc hydrogels decreased with increasing pH, with the maximum adsorption being observed at a pH value of 3.7. In terms of the Giles classification, the adsorption was of type C. BSA adsorption increased as the AAc content of the hydrogels increased. Significant amounts of adsorbed BSA (up to 95%) were eluted when an elution medium containing 1.0 M NaSCN was employed at a pH value of 8.0.

Keywords: Hydrogels

? Terzyk, A.P. (2004), Adsorption of biologically active compounds from aqueous solutions on to commercial unmodified activated carbons. Part VI. The mechanism of the physical and chemical adsorption of acetanilide. *Adsorption Science & Technology*, **22** (4), 353-376.

Full Text: [2004\Ads Sci Tec22, 353.pdf](2004/Ads%20Sci%20Tec22,%20353.pdf)

Abstract: The new correlations recently suggested between the properties of the carbon surface and the constants characterizing the process of acetanilide adsorption were extended from data that had been measured initially for six carbons. It was shown that the mechanism of acetanilide adsorption on carbons was mixed between micropore filling and adsorption on active surface sites. The latter depended strongly on the concentration of surface carboxylic, phenol and basic groups. In acidic pH, the process was irreversible due to the chemisorption of acetanilide molecules on the nucleophilic carbon sites. The rate of adsorption of acetanilide increased at acidic pH levels. Diffusion was mainly a surface process with the energy of diffusion depending on the chemical composition of the carbon surface and its polarity.

Keywords: Cylindrical Adsorbent Particles, Paracetamol In-Vitro, Neutral pH, Temperature-Dependence, 4-Hydroxyacetanilide Paracetamol, Diffusion-Coefficient, Organic-Compounds, Phenol, Herbicides, Equation

Kutarov, V.V. and Kats, B.M. (2004), Prediction of Henry’s Law constants on the basis of the corresponding states theorem. *Adsorption Science & Technology*, **22** (5), 393-400.

Full Text: [A\Ads Sci Tec22, 393.pdf](A/Ads%20Sci%20Tec22,%20393.pdf)

Abstract: It has been suggested that the well-known two-parameter Corresponding States Theorem for the prediction of the Henry coefficient should be broadened to the four-parameter theorem. The corresponding four-parameter theorem was used to analyze the experimental data for the adsorption of 16 organic and non-organic substances onto active carbon of the Kureha beads type. Employing this theorem to account for the form and change in position of the minimum in the potential curve, it was shown that the Corresponding States Theorem could be applied for the prediction of the Henry coefficient for molecules of arbitrary configuration under conditions requiring the introduction of quantum amendments. All the suggested amendments to the known two-parameter Corresponding States Theorem were strictly based and could be easily defined a priori.

Kocaoba, S. and Akcin, G. (2004), Chromium(III) removal from wastewaters by a weakly acidic resin containing carboxylic groups. *Adsorption Science & Technology*, **22** (5), 401-410.

Full Text: [A\Ads Sci Tec22, 401.pdf](A/Ads%20Sci%20Tec22,%20401.pdf)

Abstract: As a conservative technology, ion exchange allows the removal and recycling of metals from liquid effluents. A process was applied for the removal of chromium(III) from wastewaters by ion exchange. This process was based on a weakly acidic cation-exchange resin (Amberlite IRC 86) capable of removing chromium(III) from the effluent, followed by selective separation and recovery during a regeneration procedure.

Because of the difficult regeneration behaviour of the metal form of the carboxylate resin, special emphasis was given to the regeneration step of the resin where most of the practical problems were found. Five different regeneration procedures were adopted: elution with 1 M NaOH; elution with 1 M H2SO4; elution with I M NaOH followed by I M H 2 so 4 or vice versa; elution with NaOH followed by 1 M H2SO4/Na2SO4 solution; and elution with alkaline H2O2/NaOH solutions followed by 1 M H2SO4. A non-conventional regenerant solution such as hydrogen peroxide in an alkaline medium seemed very promising. The anionic species formed (chromate) was eluted quantitatively from the cation-exchange resin and separated. The regeneration efficiency of chromium(III) was 89.5%.

Influent chromium concentrations employed during the tanning process used in the leather industry were also considered. For this purpose, influent concentrations in the range 60-100 mg/l, service flow rates of 10 and 20 1/h and appropriate retention times were selected and experiments undertaken in a column system. The exhaustion step was carried out at 250 1/h with the recovery of chromium being 95.6%. The ion-exchange capacity of Amberlite IRC 86 was found to be 1.28 equiv/1. This study undertaken under laboratory conditions demonstrated that Amberlite IRC 86 resin was suitable for the removal of chromium(III) from wastewater.

Keywords: Tannery Wastes, Recovery, Adsorbent, Behavior

Attia, A.A., El-Hendawy, A.N.A. Khedr, S.A. and El-Nabarawy, T.H. (2004), Textural properties and adsorption of dyes onto carbons derived from cotton stalks. *Adsorption Science & Technology*, **22** (5), 411-426.

Full Text: [A\Ads Sci Tec22, 411.pdf](A/Ads%20Sci%20Tec22,%20411.pdf)

Abstract: Non-activated carbon ‘C’, zinc chloride-activated carbon ‘Z’ and steam-activated carbon ‘S’ were prepared from cotton stalks available as an agricultural waste. These carbon adsorbents were investigated to determine their texture and their potential for dye adsorption. Cotton stalks after chopping, washing and drying were also investigated as an additional adsorbent, designated ‘P’.

The textural properties (surface area and porosity) of the sorbents were determined from the low-temperature adsorption of nitrogen at -196°C by carefully analyzing their nitrogen adsorption isotherms. The adsorption of Methylene Blue (MB) and Congo Red (CR) at 30, 40 and 50°C was investigated via kinetic and equilibrium adsorption measurements. Activated carbons ‘Z’ and ‘S’ exhibited high surface areas and high total pore volumes and possessed high dye uptakes. Non-activated carbon ‘C’ possessed a lower but satisfactory dye uptake while the raw material ‘P’ exhibited the lowest dye uptake.

The adsorption of MB and CR was controlled by pore diffusion and followed first-order kinetics. The adsorption of the two dyes decreased with increasing adsorption temperature. The adsorption of both MB and CR was associated with a decrease in ΔG but with an increase in ΔS.

Shimizu, Y., Tominaga, T. and Saito, Y. (2004), Diethylaminoethylation of chitin and the adsorption of acid dyes onto the resulting polymer. *Adsorption Science & Technology*, **22** (5), 427-437.

Full Text: [A\Ads Sci Tec22, 427.pdf](A/Ads%20Sci%20Tec22,%20427.pdf)

Abstract: Water-soluble chitin derivatives have been synthesized by the diethylaminoethylation (DEAE) reaction and the adsorption characteristics of the resulting polymeric adsorbents towards two acid dyes (CI Acid Orange 7 and CI Acid Red 88) were studied. The adsorption behaviours towards these dyes were also compared with those exhibited by two water-insoluble commercially available derivatives. The conventional water-insoluble DEAE-chitins showed a high adsorptive capacity towards CI Acid Orange 7 compared to that on untreated chitin and alkali-treated chitin. A similar trend was also found for CI Acid Red 88 dye, where the increase in adsorption was characterized more clearly. However, the adsorption capacities towards both dyes exhibited by the water-soluble DEAE-chitins were increased significantly at a particular free dye concentration, with the adsorptive power also being increased both with the degree of DEAE substitution and the hydrophobicity of the dyes.

Fei, Z.H., Chen, J.L., Cai, J.G., Gao, G.D., Li, A.M. and Zhang, Q.X. (2004), Adsorption characteristics of phenolic compounds onto a new hypercrosslinked polymeric resin containing the 2-carbonylbenzoyl group (ZH-01). *Adsorption Science & Technology*, **22** (5), 439-449.

Full Text: [A\Ads Sci Tec22, 439.pdf](A/Ads%20Sci%20Tec22,%20439.pdf)

Abstract: A new hypercrosslinked polymeric adsorbent (ZH-01) for the adsorption and removal of phenolic compounds from their aqueous solutions was prepared. Batch kinetic studies and comparisons in adsorption capacities between XAD-4, AM-1 and ZH-01 for 800 mg/l phenol were performed, indicating the advantages of ZH-01for adsorbing phenol, *p*-cresol and *p*-nitrophenol. Both the dynamic and thermodynamic studies concluded that the adsorption of phenol and *p*-cresol onto ZH-01 involved chemisorption while *p*-nitrophenol was adsorbed physically onto ZH-01. The latter process demonstrated the homogeneous nature of the surface of ZH-01 adsorbent. Mini-column adsorption studies for phenol on ZH-01 showed that its breakthrough capacity and total capacity were 2.38 mmol/g and 3.05 mmol/g, respectively. Methanol exhibited an excellent performance in desorbing phenol from ZH-01.

Di, Z.C., Li, Y.H., Luan, Z.K. and Liang, J. (2004), Adsorption of chromium(VI) ions from water by carbon nanotubes. *Adsorption Science & Technology*, **22** (6), 467-474.

Full Text: [A\Ads Sci Tec22, 467.pdf](A/Ads%20Sci%20Tec22,%20467.pdf)

Abstract: Carbon nanotubes (CNTs), a new type of carbon material, show exceptional adsorption capability and a high adsorption efficiency for the removal of chromium(VI) ions from water over a broad pH range extending from 4.0 to 7.5. The largest adsorption capacity for CNTs occurred at pH 7.5 and attained a value of 20.56 mg/g at an equilibrium Cr(VI) ion concentration of 33.28 mg/l. The adsorption rate of Cr(VI) ions was fast over the first 20 min with the adsorption capacity of the CNTs reaching 15 mg/g rapidly. The experimental results suggest that CNTs can be employed as good adsorbents for Cr(VI) ions and have great potential for applications in environmental protection.

Keywords: Removal, Cr(VI)

Gupta, R.K. and Shankar, S. (2004), Toxic waste removal from aqueous solutions by polyaniline: A radiotracer study. *Adsorption Science & Technology*, **22** (6), 485-496.

Full Text: [A\Ads Sci Tec22, 485.pdf](A/Ads%20Sci%20Tec22,%20485.pdf)

Abstract: A radiotracer technique was used to study the removal of Hg(II) ions from aqueous solutions by polyaniline. It was shown that an increase in the concentration of the adsorptive (10-7-10-2 M), temperature (303-333 K) and pH (ca. 3-10) enhanced the removal of these ions. The first-order uptake of Hg(II) ions conformed to the Freundlich and Dubinin and Radushkevich (D-R) isotherms over the entire adsorptive concentration range (10-7-10-2 M), whereas the Langmuir isotherm was followed only at moderate concentrations. Thermal data showed that this process was endothermic in nature. The radiation stability of polyaniline was also investigated by exposing it to an 11.1 GBq (Ra/Be) source associated with gamma-dose of 1.72 Gy/h. Irradiation had practically no significant effect on the adsorption capacity of polyaniline. Desorption experiments showed that the process of Hg(II) ion adsorption by polyaniline was almost irreversible and chemisorptive in nature.

Keywords: Adsorption, Behavior, Sorption, Mercury, Cations, Membranes, Ions

Zhang, A., Wei, Y., Hoshi, H. and Kumagai, M. (2004), Adsorption and chromatographic separation of Mo(VI) and Zr(IV) ions from a high-concentration oxalic acid solution by a macroporous silica-based N,N,N’,N’-tetraoctyl-3-oxapentane-1,5-diamide polymeric adsorbent. *Adsorption Science & Technology*, **22** (6), 497-509.

Full Text: [A\Ads Sci Tec22, 497.pdf](A/Ads%20Sci%20Tec22,%20497.pdf)

Abstract: To separate Mo(VI) and Zr(IV) ions from a 0.5 M oxalic acid solution and from each other, a novel macroporous silica-based N,N,N’,N’-tetraoctyl-3-oxapentane-1,5-diamide (TODGA) chelating polymeric adsorbent (TODGA/SiO2-P) was synthesized by introducing the TODGA molecule into ca. 50-mum diameter SiO2-P particles by impregnation. The adsorption of Mo(VI) and Zr(IV) ions onto TODGA/SiO2-P was investigated by examining the influence of nitric acid and oxalic acid concentrations.

It was found that the adsorption was strongly affected by increasing the HNO3 concentration from 0.5 M to 9.0 M either with or without the addition of 0.5 M H2C2O4. In the absence of 0.5 M H2C2O4, the distribution coefficients (K-d) of both Mo(VI) and Zr(IV) ions decreased with an increase in the HNO3 concentration from 0.5 M to 3.0 M, increased slowly when the concentration of HNO3 was increased further from 3.0 M to 6.0 M, and then increased gradually above 6.0 M concentration. Furthermore, the adsorption of Zn(IV) ions onto TODGA/SiO2-P was considerably greater than that of Mo(VI) ions. In the presence of 0.5 M H2C2O4, Zr(IV) ions showed no adsorption at HNO3 concentrations below 4.0 M, being partly adsorbed in the presence of 4.0-6.0 M HNO3 and fully adsorbed when the HNO3 concentration was greater than 6.0 M. In contrast, Mo(VI) ions showed a much lower adsorption at HNO3 concentrations below 2.0 M and no adsorption above this acid level. In the presence of HNO3 at a concentration above 6.0 M and containing 0.5 M H2C2O4, the adsorption of Zr(IV) ions overlapped that from a similar HNO3 solution which did not include 0.5 M H2C2O4, This was attributed to complete protonation of the C2O42- anion.

On the basis of batch experiments, Mo(VI) and Zr(IV) ions were separated from a 6.5 M HNO3 solution containing 0.5 M H2C2O4 by means of a column packed with TODGA/SiO2-P at 50degreesC. The separate components, Mo(VI) and Zr(IV), could be effectively separated from each other by eluting with some selected eluants. The recovery percentage was 100.5% for Mo(VI) ions and 96.8% for Zr(lV) ions.

Keywords: Octyl(Phenyl)-N,N-Diisobutylcarbamoylmethylphosphine Oxide, Extraction Chromatography, Radiolytic Degradation, Solvent-Extraction, Minor Actinides, Marec Process, Cmpo, Lanthanides, Waste, Management

Wei, R.X., Chen, J.L., Chen, L.L., Fei, Z.H., Li, A.M. and Zhang, Q.X. (2004), Study of the adsorption thermodynamics and kinetics of lipoic acid onto three types of resin. *Adsorption Science & Technology*, **22** (7), 523-534.

Full Text: [A\Ads Sci Tec22, 523.pdf](A/Ads%20Sci%20Tec22,%20523.pdf)

Abstract: The adsorption of lipoic acid on three different types of resin was compared. Studies of the adsorption thermodynamics and kinetics of lipoic acid onto XAD-4, NDA-100 and ND-90 resins were carried out via static experiments. The results showed that the polar groups and micropore ranges associated with the resins played a significant role in the adsorption of lipoic acid. Such processes were exothermic and involved physical adsorption. The adsorption of lipoic acid onto XAD-4 resin corresponded to the formation of a Langmuir monolayer, with the adsorption velocity appearing to follow first-order kinetics. The adsorption data of lipoic acid onto NDA-100 and ND-90 resins were also well fitted by the Langmuir isotherm, which was associated with capillary condensation and volume filling of micropores besides monolayer adsorption. In contrast, the adsorption of lipoic acid onto NDA-100 and ND-90 resins involved two pore ranges: macropore + mesopore and micropore. The adsorption velocities for the two ranges followed first-order kinetics.

Keywords: Activated Carbon, Adsorption, Adsorption Thermodynamics, Carbon Surface-Chemistry, Exothermic, Experiments, First-Order Kinetics, Hypercrosslinked Polymeric Adsorbents, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Mesopore, Monolayer, Naphthalene Derivatives, Organic-Compounds, Phenolic-Compounds, Polystyrene, Resin, Resins, Solid-Phase Extraction, Sorption, Thermodynamics, Water, XAD-4

Yurlova, L.Yu. and Kryvoruchko, A.P. (2004), Removal of Pb(II) ions from contaminated water by polymer-supported ultrafiltration. *Adsorption Science & Technology*, **22** (7), 543-551.

Full Text: [A\Ads Sci Tec22, 543.pdf](A/Ads%20Sci%20Tec22,%20543.pdf)

Abstract: Through the ultrafiltration of water containing Pb(II) ions and poly(ethyleneimine) as an example, it was possible to determine the Pb(II) ion retention coefficients by UPM-20 membranes and the corresponding transmembrane fluxes. The optimal parameters, i.e. pH and concentration ratio C-Pb(II)/C-PEI, necessary to remove Pb(II) ions from aqueous media using a complexation/ultrafiltration technique (polymer-supported ultrafiltration) were also determined. The state of water in the membranes and its quantity were found using differential scanning calorimetric methods.

On the basis of investigations by the method of differential scanning calorimetry, it was possible to assume that the layers of Pb(II)-poly(ethyleneimine) complexes and Pb(II) hydroxo complexes were situated either on the membrane surface or in its pores. In addition, a relationship was established between the transmembrane transfer of Pb(II) ions and the amount of free and bound water in the membrane under investigation.

Keywords: Complexation, Substances

Kobya, M., Demirbas, E. and Bayramoğlu, M. (2004), Modelling the effects of adsorbent dose and particle size on the adsorption of Cr(VI) ions from aqueous solutions. *Adsorption Science & Technology*, **22** (7), 583-594.

Full Text: [A\Ads Sci Tec22, 583.pdf](A/Ads%20Sci%20Tec22,%20583.pdf)

Abstract: Activated carbon was prepared from hazelnut shell with chemical carbonization using concentrated sulphuric acid. The adsorption tests were carried out in an agitated batch system with a fixed initial Cr(VI) ion concentration and varying adsorbent particle sizes and doses. The adsorption of Cr(VI) ions correlated strongly with these two variables. Two simple empirical models were examined for predicting the percentage of Cr(VI) ion adsorbed. Both models exhibited good correlation coefficients. The best model was selected on the basis of the standard deviation between the calculated and experimental values. The Freundlich adsorption isotherm provided the best correlation for the adsorption of Cr(VI) ions onto the carbon. This isotherm was used to fit the experimental adsorption capacity data and allowed the model parameters to be calculated and correlated with the particle size.

Keywords: Low-Cost Adsorbents, Activated Carbon, Heavy-Metals, Hazelnut Shell, Removal, Chromium(VI), Wastewaters, Kinetics, Water

Tao, Q.H. and Tang, H.X. (2004), Sorption behaviour of atrazine onto natural sediments under various solution conditions. *Adsorption Science & Technology*, **22** (8), 639-652.

Full Text: [A\Ads Sci Tec22, 639.pdf](A/Ads%20Sci%20Tec22,%20639.pdf)

Abstract: Potentiometric titrations, XRD analysis and batch adsorption experiments were conducted under various solution chemistry conditions to study the uptake of atrazine (AT) from sediment/water suspensions. A constant capacitance surface complexation model was then applied to interpret the reaction mechanism at the aqueous sediment surfaces. The results obtained showed that the sediment sample was negatively charged over a large range of pH values, with the model calculations matching well with the experimental results.

Increasing pH value and low ionic strength, as well as high solid concentrations, led to a decrease in the adsorption of AT. The existence of dissolved organic matter (DOM) in the sediment/water system also influenced the uptake of AT by the sediment. A large increase in AT adsorption occurred for sediment pre-incubated with DOM, with a decrease in AT uptake occurring when herbicide was pre-incubated with DOM. In addition, the results suggested that long aliphatic chains must play an important role in the pesticide interaction with DOM fractions.

Long, C., Zhang, Q.X. and Chen, J.L. (2004), Adsorption of aromatic sulphonic acids onto macroporous exchangers: Effect of the chemical structure of the adsorbent on the adsorption capacity. *Adsorption Science & Technology*, **22** (8), 653-661.

Full Text: [A\Ads Sci Tec22, 653.pdf](A/Ads%20Sci%20Tec22,%20653.pdf)

Abstract: The adsorption of 2-naphthalene sulphonic acid from aqueous solution was studied using macroporous weak base exchangers with different matrices. This study reports the results of the favourable adsorption behaviour of 2-naphthalene sulphonic acid onto polymeric anion exchangers. The difference in adsorption affinity, together with the enthalpic and entropic changes associated with the adsorption process, was interpreted in terms of the chemical structure of the exchangers and appropriate interaction between the non-polar moiety of the aromatic anion and the exchanger matrices. The exchanger matrix had a distinct influence on the adsorption capacity of the aromatic sulphonic acid.

Pshinko, G., Spasenova, L. and Kornilovich, B. (2004), Complexation and sorption of europium(III) ions onto clay minerals in the presence of fulvic acids. *Adsorption Science & Technology*, **22** (8), 669-678.

Full Text: [A\Ads Sci Tec22, 669.pdf](A/Ads%20Sci%20Tec22,%20669.pdf)

Abstract: The effect of fulvic acids (FA) on the sorption of europium(III) ions from aqueous solution onto Gluhovsky kaolinite and Cherkasky montmorillonite was studied. Sorption of Eu(III) ions onto the mineral surface increased as the pH value of the aqueous solution increased from 1 to 8, but decreased when fulvic acids were present in solution. Over the concentration range studied, Eu(III) ion sorption occurred as free europium ions which were not bound as fulvate complexes. At pH≥6 and at high Eu(III) ion concentrations (> 200 μmol/dm3), the increase in europium ion adsorption in the presence of fulvic acids was twice that observed in their absence. This demonstrated the formation, under these conditions, of a two-nucleus complex with a chain of the type sorbent–Eu–FA–Eu. In natural waters at pH > 6, Eu(III) exists mainly in the form of soluble complexes where binding occurs via the oxygen atoms of the phenol groups in FA.

Sokker, H.H., Abdel Halim, E.S., Aly, A.S. and Hashem, A. (2004), Cellulosic fabric wastes grafted with DMAEMA for the removal of direct dyes. *Adsorption Science & Technology*, **22** (9), 679-691.

Full Text: [A\Ads Sci Tec22, 679.pdf](A/Ads%20Sci%20Tec22,%20679.pdf)

Abstract: Dimethylaminoethyl methacrylate (DMAEMA) was grafted onto a cellulosic fabric waste via gamma-irradiation (60Co). Factors affecting the grafting such as the radiation dose and monomer concentration were investigated. The grafted fabric waste was studied by infrared (FT-IR) spectroscopy and thermogravimetric analysis (TGA), as well as its surface morphology. The ability of the grafted fabric waste for removing Direct Violet 31 from its aqueous solution was studied by batch experiments. The adsorption data obeyed the Langmuir and Freundlich isotherms. It was found that 1 g of grafted fabric waste adsorbed 40 mg of Direct Violet 31 from its aqueous solution. The grafted fabric waste could be used as an adsorbent for water pollutants such as dyes, thereby solving one of the most important environmental problems of the textile industry.

? Faghihian, H., Maragheh, M.G., Amini, M.K. and Nezamzadeh, A.R. (2004), Thorium ion uptake by zeolite A synthesized from natural clinoptilolite tuffs. *Adsorption Science & Technology*, **22** (9), 707-717.

Full Text: [2004\Ads Sci Tec22, 707.pdf](2004/Ads%20Sci%20Tec22,%20707.pdf)

Abstract: Natural clinoptilolite tuffs from the Semnan region of Iran were used for the synthesis of zeolite A. The tuffs and synthesized zeolite were characterized by XRD and XRF methods. The sorption behaviour of the synthesized zeolite towards thorium ions was studied. The corresponding adsorption constant was calculated using the Lagergren equation. The measured values of the distribution coefficient (K-d) indicated that Th(IV) ion uptake was higher at lower initial concentrations, higher temperature and higher pH values. The thermodynamic parameters for the exchange were calculated through the construction of ion-exchange isotherms at 298, 323 and 343 K, respectively. The dynamic adsorption of Th(IV) ions was also studied by passing the solution through a column in the presence and absence of sodium ions.

Lebedynets, M., Sprynskyy, M., Sakhnyuk, I., Zbytniewski, R., Golembiewski, R. and Buszewski, B. (2004), Adsorption of ammonium ions onto a natural zeolite: Transcarpathian clinoptilolite. *Adsorption Science & Technology*, **22** (9), 731-741.

Full Text: [2004\Ads Sci Tec22, 731.pdf](2004/Ads%20Sci%20Tec22,%20731.pdf)

Abstract: A study was carried out of ammonium ion sorption from synthetic aqueous solutions by Transcarpathian clinoptilolite, a natural zeolite, under static conditions. The main physical properties of the clinoptilolite and the basic parameters of its porous structure were determined. Values of the specific surface area and of the pore volume occupied by sorbed substances were calculated using the relative moisture content established and the maximum sorption capacity exhibited towards ammonium ions as well as a nitrogen adsorption/desorption method. Ammonium ion sorption by the zeolite appeared to be complete within 24 h for all fraction sizes, initial NH4+ ion concentration and adsorbate volumes. The amounts of NH4+ ions sorbed increased with increasing initial NH4+ concentration and decreasing adsorbate volumes, with the maximum sorption capacity exhibited by the clinoptilolite being 0.64 mequiv/g. The sorption effectiveness decreased,somewhat with increasing fraction size. The Langmuir and Freundlich models were applied to the data obtained from the batch studies with the first model exhibiting the more satisfactory correlation coefficient value (0.996 and 0.959, respectively).

Keywords: Aqueous-Solution, Exchange, Removal, Water

O’Brien, J., Curtin, T. and O’Dwyer, T.F. (2004), Adsorption of aniline from aqueous solution using copper-exchanged ZSM-5 and unmodified H-ZSM-5. *Adsorption Science & Technology*, **22** (9), 743-754.

Full Text: [2004\Ads Sci Tec22, 743.pdf](2004/Ads%20Sci%20Tec22,%20743.pdf)

Abstract: Three medium-pore aluminosilicates were investigated with a view to examining their potential as adsorbents for the removal of aniline from aqueous solutions. H-ZSM-5 was exchanged with copper to prepare two different metal-loaded zeolites. The aqueous stability of the copper-exchanged zeolites was then examined by assessing the quantity of copper leached from each zeolite into solution as a function of pH. The optimum stability range with minimal copper leaching occurred between pH values of 5 and 9. The adsorption of aniline from aqueous solution onto each of the three zeolites was carried out within this pH window and the influence of the exchanged copper on the uptake level was assessed. The sorption experiments indicated an uptake level of approximately 40 mg/g for each zeolite. In all cases, the process followed the Langmuir adsorption model with the level of aniline adsorbed being largely unaffected by a change in temperature or the presence of extra-framework copper.

Keywords: Bulk Liquid-Phase, H-ZSM-5, Molecules, No, Pollutants, Silicalite, Sorption, Water, Zeolite

Sing, K.S.W. and Williams, R.T. (2004), Physisorption hysteresis loops and the characterization of nanoporous materials. *Adsorption Science & Technology*, **22** (10), 773-782.

Full Text: [2004\Ads Sci Tec22, 773.pdf](2004/Ads%20Sci%20Tec22,%20773.pdf)

Abstract: The classification of adsorption hysteresis loops recommended by the IUPAC in 1984 was based on experimental observations and the application of classical principles of pore filling (notably the use of the Kelvin equation for mesopore analysis). Recent molecular simulation and density functional (DFT) studies of the physisorption of gases by model pore structures have greatly improved our understanding of the mechanisms of hysteresis and it is therefore timely to revisit the IUPAC recommendations. In this review, we conclude that there is no immediate need to change the IUPAC classification of physisorption isotherms and hysteresis loops. However, in the light of recent advances, we are able to offer a revised checklist for the analysis of nitrogen isotherms on nanoporous solids: this includes a carefully regulated application of DFT in place of a classical procedure such as the well-known Barrett-Joyner-Halenda (BJH) method.

Keywords: Adsorption, Capillary Condensation, Density-Functional Theory, Model Mesoporous Adsorbent, Nitrogen Sorption Measurements, Pore Blocking, Porous Solids, Simulation, Thermodynamics, Vapor

Minihan, M.M., McCann, E. and Leahy, J.J. (2004), Metal ion adsorption by peat and solvent-extracted peat. *Adsorption Science & Technology*, **22** (10), 783-793.

Full Text: [A\Ads Sci Tec22, 783.pdf](A/Ads%20Sci%20Tec22,%20783.pdf)

Abstract: The effect of the solvent extraction of peat on the sorption behaviour of three divalent metal ions [iron(II), lead and barium] was examined. Solvent extraction of peat resulted in particles of a smaller size with a significantly increased surface area. The extracted peat also demonstrated an increase in cation-exchange capacity from 127.2 to 149.5 mequiv/100 g, apparently due to an increase in available phenolic groups. Adsorption experiments carried out at pH 4.5 on peat and on the solvent-extracted peat using the three metal ions showed that the sorption behaviour of Fe(II) and Pb(II) ions correlated strongly with the Langmuir isotherm whereas the behaviour of Ba(II) ions was better described by the Freundlich expression.

When the two peat substrates were compared, the monolayer saturation capacity observed for the Fe(II) ion on peat was 0.357 mmol/g while a value of 0.420 mmol/g was recorded for the solvent-extracted peat, with solvent extraction of the peat leading to a more modest increase in Pb(II) ion adsorption. The increase in molar monolayer saturation capacity for the Fe(II) ion suggests that these smaller ions were bound preferentially to the strong phenolic sites, with Pb(II) ion adsorption occurring on the carboxylic sites. In the case of Ba(II) ions, interactions other than ion exchange contributed to the sorption behaviour.

Keywords: Sphagnum Moss Peat, Waste-Water; Aqueous-Solution, Humic Substances, Copper Ions, Sorption, Removal, Binding, Adsorbent, Kinetics

Li, A.M., Zhang, Q.X., Wu, H.S., Zhai, Z.C., Liu, F.Q., Fei, Z.H., Long, C., Zhu, Z.L. and Chen, J.L. (2004), A new amine-modified hypercrosslinked polymeric adsorbent for removing phenolic compounds from aqueous solutions. *Adsorption Science & Technology*, **22** (10), 807-819.

Full Text: [2004\Ads Sci Tec22, 807.pdf](2004/Ads%20Sci%20Tec22,%20807.pdf)

Abstract: A new amine-modified hypercrosslinked polymeric resin, AH-6 for the removal of phenolic compounds from their aqueous solutions was prepared by introducing dimethylamine groups onto the matrix of the conventional hypercrosslinked polymeric adsorbent NDA100. The adsorption of four phenolic compounds, i.e. phenol, p-cresol, p-chlorophenol and p-nitrophenol, onto the NDA100 resin with or without amine modification was investigated using the commercial styrene-type weakly alkaline resin D301 as a reference. The Freundlich isotherm equation was employed to fit the adsorption process. The aminated hypercrosslinked polymeric resin exhibited a higher adsorption capacity towards phenol and p-chlorophenol than both the unmodified hypercrosslinked polymeric resin NDA100 and the styrene-type weakly alkaline resin D301. To interpret the adsorption behaviour of the AH-6 resin, a dual function interaction mechanism involving pi-pi interaction between the AH-6 resin matrix and the benzene ring of the adsorbate and hydrogen-bonding interaction between the hydroxyl groups of the adsorbate and the amine group of the adsorbent was proposed. In contrast, hydrogen-bonding or donor-acceptor interaction may govern the adsorption of p-nitrophenol.

Keywords: Activated Carbon, Adsorption, Amberlite XAD-4, Equilibrium, Naphthalene Derivatives, Polystyrene, Resins, Solid-Phase Extraction, Sorption, Water

Olafadehan, O.A. and Susu, A.A. (2004), Modelling and simulation of ternary liquid-phase adsorption onto activated carbon. *Adsorption Science & Technology*, **22** (10), 821-836.

Full Text: [2004\Ads Sci Tec22, 821.pdf](2004/Ads%20Sci%20Tec22,%20821.pdf)

Abstract: A computational procedure is presented for solving the set of rigid hyperbolic and parabolic partial differential equations describing the simultaneous adsorption of a ternary system in a column packed with adsorbent particles using the non-linear adsorption isotherms of Fritz and Schluender. The model equations account for the effects of axial diffusion in the fluid and the film and internal diffusional mass-transfer resistances of the particles. Orthogonal collocation and Michelsen’s modified third-order semi-implicit Runge-Kutta method combined with a step-size adjustment strategy were used to solve the general form of the resulting 6N coupled ordinary differential equations for the simultaneous adsorption of butan-2-ol, t-amyl alcohol and phenol in fixed beds. The simulated results obtained from this model were compared with experimental data. Excellent agreement between the simulated results and previously published experimental data was obtained. The breakthrough profiles were also indicative of the competitive multi-component adsorption behaviour as well as the formation of multiple adsorption layers upon the primary monomolecular layer.

Keywords: Approximate Solutions, Fixed-Beds, Multicomponent Adsorption, Orthogonal Collocation, Solutes

Zamin, M., Shaheen, T. and Ahmed, M. (2004), Removal of nickel-63 ions from aqueous solutions by chitosan flakes. *Adsorption Science & Technology*, **22** (10), 849-868.

Full Text: [A\Ads Sci Tec22, 849.pdf](A/Ads%20Sci%20Tec22,%20849.pdf)

Abstract: Radiotracer batch equilibrium experiments were undertaken to check the uptake of nickel-63 from aqueous solutions by a natural polymer, i.e. chitosan obtained from fishery wastes (shrimp, crab and prawn shells). The results of kinetic and equilibrium studies showed significant removal of 63Ni by chitosan with the uptake being pH-dependent. The experimental adsorption data obtained for aqueous solutions containing 63Ni metal ions were found to correlate well with the Langmuir, Freundlich and Dubinin–Radushkevich (D–R) isotherm equations. The following parameters were obtained: Freundlich: 1/n = 0.57 ± 0.02; A = 0.105 ± 0.003 mmol/g; Langmuir: Q = 0.2 ± 0.14 μmol/g; b = 128.47 ± 0.56 dm3/mol; D–R: β = -0.0043 kJ2/mol2; Cm = 0.16 mmol/g; E = 10.78 ± 0.2 kJ/mol. Thermodynamic parameters, i.e., δG0, δS0 and δH0, were also calculated, with the sorption process being shown to be endothermic.

Fei, Z.H., Wang, M.J., Chen, J.L., Sun, Y., Li, A.M. and Zhang, Q.X. (2005), Adsorption characteristics of o-phthalic acid and its separation by resins from maleic acid and fumaric acid in wastewater. *Adsorption Science & Technology*, **23** (1), 37-45.

Full Text: [2005\Ads Sci Tec23, 37.pdf](2005/Ads%20Sci%20Tec23,%2037.pdf)

Abstract: A comparison was made of the adsorption properties towards o-phthalic acid of ND100 resin modified by oxygen groups and ND900 resin modified by amine groups. The work presented focused on various properties including adsorption under static equilibrium conditions, the adsorption thermodynamics and kinetics. In addition, a method was devised for the separation of o-phthalic acid from maleic acid and fumaric acid in wastewater. Two isotherm models (Langmuir and Freundlich) were used to fit the static adsorption results. Both equations fitted the experimental data perfectly. The kinetic results led to the conclusion that the adsorption of o-phthalic acid onto ND900 involved a type of chemical transition.

Keywords: Activated Carbons, Aqueous-Solutions, Polymer, Recovery, Removal

Javid, M., Mustafa, S., Zaman, M.I. and Gul, R. (2005), Exchange behaviour of amorphous AlPO4 towards Cu2+ ions. *Adsorption Science & Technology*, **23** (1), 57-66.

Full Text: [2005\Ads Sci Tec23, 57.pdf](2005/Ads%20Sci%20Tec23,%2057.pdf)

Abstract: Sorption studies of Cu2+ ions onto AlPO4 were carried out as a function of pH (3-5) and temperature (303-323 K). The extent of sorption was found to increase with an increase in Cu2+ ion concentration, pH and the temperature of the system. The Kurbatov equation along with a new equation based on the law of mass action were found applicable to the sorption data. The sorption mechanism was found to consist of an exchange between the H+ ions from the exchanger and Cu2+ ions from the aqueous solution. The thermodynamic parameters evaluated showed that the process was endothermic and nonspontaneous in nature. FT-IR spectroscopy was also employed to evaluate the mechanism of Cu2+ ion sorption.

Keywords: Phosphates, Sorption, Water

Halhouli, K.A., Darwish, N.A. and Al-Jahmani, Y.Y. (2005), Adsorption of *p*-dihydroxybenzene from single, binary and ternary aqueous systems onto activated charcoal. *Adsorption Science & Technology*, **23** (1), 67-79.

Full Text: [2005\Ads Sci Tec23, 67.pdf](2005/Ads%20Sci%20Tec23,%2067.pdf)

Abstract: The adsorption of para-dihydroxybenzene (p-DHB) from aqueous multi-component systems onto activated charcoal was investigated. The study involved the adsorption of p-DHB from systems containing all combinations of p-DHB, phenol and 4-ammo-1-naphthalene sulphomic acid sodium salt (ANSA) in aqueous solutions. Equilibrium isotherms were generated at three temperature values (30°C, 40°C and 55°C). As expected for exothermic physical adsorption, the adsorption of p-DHB from the single-component system and from the binary system containing ANSA decreased with increasing temperature. However, the adsorption of p-DHB; from the binary system containing phenol increased with temperature. The effect of KCl and NaCl (at a concentration of 0.05 M) at 30°C was also investigated. The adsorption of p-DHB varied from one system to another. Both salts reduced the adsorption of p-DHB from the single and binary systems. The reduction in adsorption capacity (relative to the adsorption capacity in a salt-free system) attained only ca. 35% in the case of single-solute adsorption and ca. 20% and 33% from the binary systems containing p-DHB and phenol or ANSA, respectively. In contrast, the presence of KCl or NaCl had no appreciable effect on the adsorption of p-DHB from the ternary system.

Keywords: Carbon, Competitive Adsorption, Equilibria, Fixed-Beds, Inorganic Salts, Mechanism, Phenol, Temperatures

Sahasrabudhe, A., Varma, S. and Gupta, N.M. (2005), The temperature-dependent adsorption behaviour of benzene molecules in ZSM-5 zeolite pores: TPD and FT-IR spectroscopy studies. *Adsorption Science & Technology*, **23** (2), 95-107.

Full Text: [2005\Ads Sci Tec23, 95.pdf](2005/Ads%20Sci%20Tec23,%2095.pdf)

Abstract: Temperature-programmed desorption (TPD) and in situ Fourier-transform infrared (FT-IR) spectroscopic methods were employed to investigate the effect of loading and sample temperature on the state of benzene molecules inside the channels of NaZSM-5 zeolite. TPD profiles revealed the existence of at least three distinct states of benzene adsorption, characterized by desorption peak maxima at ca. 120°C, 170°C and 220°C, respectively. Based on the growth behaviour of these bands, it is suggested that the benzene molecules occupy sinusoidal channels, straight channels and external surfaces, in that order. A reverse trend was observed during the subsequent flushing of the sample at varying temperatures. A virtually fixed amount of benzene was occluded at these three locations, depending upon the loading. The FT-IR studies revealed that the benzene molecule exists in a compressed state in the zeolitic channels, with the molecular clusters formed in the process dispersing only at temperatures above 150°C. For initial benzene loadings of up to ca. 1.5 molecules, unit cell, the spectrum obtained showed that in the O-H stretch region the bridge-bonded OH groups and hydroxyl groups associated with the internal zeolitic channels were perturbed simultaneously. The results show that even for a loading lower than necessary for saturation, a considerable amount of benzene remains condensed at the external surface of ZSM-5 zeolite.

Keywords: Binding States, CO, Diffusion, Elastic Neutron-Scattering, H-ZSM-5 Zeolite, Motions, Silicalite

Vennilamani, N., Kadirvelu, K., Sameena, Y. and Pattabhi, S. (2005), Utilization of activated carbon prepared from industrial solid waste for the removal of chromium(VI) ions from synthetic solution and industrial effluent. *Adsorption Science & Technology*, **23** (2), 145-160.

Full Text: [2005\Ads Sci Tec23, 145.pdf](2005/Ads%20Sci%20Tec23,%20145.pdf)

Abstract: Activated carbon (AC) prepared from sago waste was characterized and used to remove chromium(VI) ions from aqueous solution and industrial effluent by adsorption methods using various conditions of agitation time, metal ion concentration, adsorbent dosage particle size and pH. Surface modification of the carbon adsorbent with a strong oxidizing agent like concentrated H2SO4 generates more active adsorption sites on the solid surface and pores for metal ion adsorption. Adsorption of the metal ion required a very short time and led to quantitative removal. Both the Langmuir and Freundlich isotherm models could describe the adsorption data. The calculated. values of Q(0) and b were 5.78 mg/g and 1.75±1/min, respectively. An effective adsorption capacity was noted for particle sizes in the range 125-250 μm at room temperature (30±2°C) and an initial pH of 2.0±0.2. The specific surface area of the activated carbon was determined and its properties studied by scanning electron microscopy (SEM) and Fourier-transform infrared spectroscopy (FT-IR). These studies revealed that AC prepared from sago waste is suitable for the removal of Cr(VI) ions from both synthetic and industrial effluents.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Aqueous Solution, Aqueous-Solution, Capacity, Carbon, Chromium(VI), Coirpith, Cr(VI), Cu(II), Eichhornia, Electron Microscopy, Freundlich, Freundlich Isotherm, FT-IR, FTIR, Isotherm, Langmuir, Mercury(II), Metal, Methods, Models, Modification, Particle Size, pH, Removal, Room Temperature, Scanning Electron Microscopy, SEM, Size, Solid Waste, Solution, Specific Surface, Spectroscopy, Surface Area, Temperature, Waste, Water

Olafadehan, O.A. and Susu, A.A. (2005), Numerical solution of binary liquid-phase adsorption onto porocel clay using linear, Freundlich and Langmuir isotherms. *Adsorption Science & Technology*, **23** (3), 195-213.

Full Text: [2005\Ads Sci Tec23, 195.pdf](2005/Ads%20Sci%20Tec23,%20195.pdf)

Abstract: A generalized mathematical model is presented to describe the process of multi-component adsorption onto porous media in fixed beds. The model was applied to the binary adsorption, without reaction, of aromatics and sulphur compounds onto a fixed bed of Porocel clay for kerosene deodorization using linear, Freundlich and Langmuir isotherms independently. A computational scheme for the solution of the model equations is presented. The scheme is based on orthogonal collocation for spatial discretization of the resulting set of coupled hyperbolic and parabolic partial differential equations for the macro-and micro-system, respectively. Michelsen’s modified third-order semi-implicit Runge-Kutta method combined with step-size adjustment strategy was used to integrate the resulting 4N ordinary differential equations. Excellent agreement between the simulated results and pilot plant data was obtained for the breakthrough profiles for the non-linear adsorption isotherms of Freundlich and Langmuir. No agreement was obtained for the linear isotherm. Also, using the Freundlich and Langmuir isotherms, the exit concentration of the less preferentially adsorbed component (aromatics) exceeded its inlet concentration to the adsorption column for a certain period. This is indicative of the behaviour of competitive multi-component adsorption: relative to aromatics, sulphur compounds are selectively adsorbed onto Porocel clay. The relationship between solid- and liquid-phase concentration profiles for the Freundlich isotherm revealed the formation of multiple adsorption layers upon the primary mono-molecular layer. Again, for the Freundlich isotherm, the structure of the profiles exhibited a highly pronounced maximum for sulphur. An experimental breakthrough time of 8 h was also predicted for both aromatics and sulphur compounds using the non-linear Freundlich and Langmuir isotherms.

Keywords: Activated Carbon, Fixed-Bed, Multicomponent Adsorption, Systems

Yacoub, N., Ramadan, A.R. and Ragai, J. (2005), Ion-exchange and adsorption properties of titania gels prepared from titanous chloride and hydrogen peroxide. *Adsorption Science & Technology*, **23** (3), 215-224.

Full Text: [2005\Ads Sci Tec23, 215.pdf](2005/Ads%20Sci%20Tec23,%20215.pdf)

Abstract: A study was carried out of the uptake of Cu2+, Ni2+, Co2+ and Ca2+ cations by hydrous titanium oxides prepared at different pH values using titanous chloride as the starting material and hydrogen peroxide as the oxidizing agent. Characterization of the oxides was carried out by nitrogen adsorption and infrared studies. The oxides were found to be amphoteric in nature and exhibited an isoelectric point of 6.6. An attempt was made to elucidate the mechanism of cation uptake which does not entail a simple ion-exchange mechanism.

Keywords: Cesium, Dioxide Fibers, Heat-Treatment, Metal-Ions, Origin, Oxides, Porosity

Fei, Z.H., Xia, M.F., Wu, L., Chen, J.L., Gu, Y.L., Li, A.M. and Zhang, Q.X. (2005), Chemisorption characteristics of 2,4-dichlorophenol in aqueous solution onto different adsorbents. *Adsorption Science & Technology*, **23** (3), 225-233.

Full Text: [2005\Ads Sci Tec23, 225.pdf](2005/Ads%20Sci%20Tec23,%20225.pdf)

Abstract: The adsorption properties towards 2,4-dichlorophenol of several adsorption resins, viz. ZH-01, ZH-02 and ZH-03 respectively modified with different functional groups, and of granular activated carbon (GAC) have been compared experimentally with those of Amberlite XAD-4. This paper focuses on the static equilibrium adsorption behaviours and the confirmation of chemisorption characteristics. An equation relating the amount chemisorbed and the assumed chemisorption equilibrium concentration of adsorbate in the aqueous solution was established. This shows that the data may be fitted perfectly by the Langmuir equation. The adsorption capacities measured at different temperatures and the static desorption efficiency reveal that the adsorption of 2,4-dichlorophenol from water onto ZH-01, ZH-02, ZH-03 or GAC occurs via a simultaneous process involving physical adsorption and chemical reaction.

Keywords: Adsorption, Phenolic-Compounds, Polystyrene, Removal

Lu, Z.Y., Long, C., Li, A.M., Jiang, Z.M., Liu, W., Chen, J.L. and Zhang, Q.X. (2005), Adsorption of reactive brilliant blue XBR onto polymeric adsorbents from single- and binary-solute solutions. *Adsorption Science & Technology*, **23** (3), 235-244.

Full Text: [2005\Ads Sci Tec23, 235.pdf](2005/Ads%20Sci%20Tec23,%20235.pdf)

Abstract: A non-ionic polymer adsorbent (NPA) and its aminated polymeric adsorbent (APA) were prepared and characterized towards adsorption from aqueous solution. Two adsorbates, Reactive Brilliant Blue XBR and 24-diaminobenzene sulphonic acid (ABSA), were chosen as adsorbates for competitive adsorption from single-solute solution and binary-solute systems onto the two adsorbents prepared. The results showed that APA, the polymer obtained after amination, exhibited a higher adsorption capacity than NPA towards XBR from the single-solute solution. However, in binary-solute solution adsorption, the presence of ABSA reduced the adsorption capacity towards XBR due to direct competition between XBR and ABSA for the same adsorption sites. This resulted in similar adsorption capacities towards XBR for NPA and APA. Moreover, the adsorption selectivity coefficients obtained for XBR onto ABSA in simultaneous adsorption tests suggested that NPA exhibited more favourable adsorption properties towards the adsorption of XBR front binary-solute systems than APA.

Keywords: Dyes, Husk, Removal, Sorbents, Sorption, Textile Effluent

O’Brien, J., Curtin, T. and O’Dwyer, T.F. (2005), An investigation into the adsorption of aniline from aqueous solution using H-beta zeolites and copper-exchanged beta zeolites. *Adsorption Science & Technology*, **23** (3), 255-266.

Full Text: [2005\Ads Sci Tec23, 255.pdf](2005/Ads%20Sci%20Tec23,%20255.pdf)

Abstract: Zeolite beta, a large-pore zeolite, was investigated in this study with a view to examining it as a potential adsorbent for the removal of aniline from aqueous solutions. Two different metal-loaded zeolites were prepared by exchanging H-beta zeolite (SiO2/Al2O3 = 75:1) with copper. The influence of exchanged copper on the uptake level was assessed. The effect of varying the silica-to-alumina ratio of the H-beta zeolite on the aniline uptake level was also examined, using three different H-beta zeolites with ratios of 25:1, 75:1 and 150:1 as adsorbents. The sorption experiments indicated an uptake level of ca. 110-120 mg/g for each zeolite and this level was also adsorbed by the copper-modified H-beta zeolites (SiO2/Al2O3 = 75:1). In all cases, the adsorption process followed the Langmuir model for adsorption and the level of aniline adsorbed was largely unaffected by a change in temperature or the presence of extra framework copper. The stability of the exchanged copper on these zeolites was then examined by measuring the quantity of copper leached from each zeolite into solution as a function of pH. Minimum copper leaching was observed in the pH range 5-11. This provided a stable pH working range for the adsorbent materials.

Keywords: Catalysts, H-ZSM-5, Phenol, Pollutants, Silicalite, Water-Treatment

Gonzo, E.E. and Gonzo, L.E. (2005), Kinetics of phenol removal from aqueous solution by adsorption onto peanut shell acid-activated carbon. *Adsorption Science & Technology*, **23** (4), 289-301.

Full Text: [2005\Ads Sci Tec23, 289.pdf](2005/Ads%20Sci%20Tec23,%20289.pdf)

Abstract: A pseudo-second-order rate equation describing the kinetic adsorption of phenol onto peanut shell acid-activated carbon at different initial concentrations, carbon dosages and particle sizes has been developed. The adsorption kinetics were followed on the basis of the amount of phenol adsorbed at various time intervals at 22°C. The rate constant and the equilibrium adsorption capacity were calculated. From these parameters, empirical correlations for predicting the equilibrium adsorption capacity as a function of the C-0/D ratio, and for estimating the rate constant as a function of the relation D/(C(0)d(p))(0.5), were derived.

This allowed a general rate expression for design purposes to be obtained which was valid for C-0/D < = 1.5. The operation line for each case studied was constructed and the equilibrium adsorption capacity obtained. A comparison was undertaken with the experimental adsorption isotherm as previously determined. The effect of the initial phenol concentration, the carbon dose and the particle size on the initial adsorption rate was also analyzed.

Keywords: Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Kinetics, Adsorption Rate, Aqueous Solution, Capacity, Carbon, Comparison, Design, Dose, Dyes, Equilibrium, Function, Ions, Isotherm, Kinetic, Kinetics, Liquid-Phase Adsorption, Organic-Compounds, Particle Size, Phenol, Pseudo-Second-Order, Removal, Shell

Vijayaraghavan, K., Jegan, J.R., Palanivelu, K. and Velan, M. (2005), Nickel recovery from aqueous solution using crab shell particles. *Adsorption Science & Technology*, **23** (4), 303-311.

Full Text: [2005\Ads Sci Tec23, 303.pdf](2005/Ads%20Sci%20Tec23,%20303.pdf)

Abstract: The potential use of crab shell as a sorbent for the removal of nickel(II) ions from aqueous solution was investigated. The binding of nickel ions by crab shell was found to be affected significantly by pH, with the maximum sorption capacity being observed at pH 4.5. The sorption isotherm was well represented using the Freundlich model. Nickel(II) ion removal by crab shell was mainly influenced by the removal of calcium carbonate, proteins and chitin, indicating the importance of these components in nickel ion binding. Co-ions such as Cu2+, Co2+ Cd2+ Zn2+ and Mg2+ affected the Ni(II) ion removal efficiency of crab shell.

The biosorbed Ni(II) ions were effectively eluted by various mineral acids, EDTA solutions and NH4OH. of these, the sodium salt of EDTA (0.01 M) in NH4OH appeared to be the best eluant, being capable of desorbing more than 99% of the sequestered Ni(II) ions with insignificant damage to the shell particles. The biosorbent could be regenerated and re-used in five sorption-elution cycles.

Keywords: Heavy-Metals, Biosorption, Removal, Biosorbent, Chitosan, Cobalt, Lead

Saliba, R., Gauthier, H. and Gauthier, R. (2005), Adsorption of heavy metal ions on virgin and chemically-modified lignocellulosic materials. *Adsorption Science & Technology*, **23** (4), 313-322.

Full Text: [2005\Ads Sci Tec23, 313.pdf](2005/Ads%20Sci%20Tec23,%20313.pdf)

Abstract: Amidoximated wood sawdust (Am-WS) and wood flour (Am-Wf) were prepared using the same procedure as described recently for amidoximated cellulose (Am-Cell). The modified supports thus obtained were characterized by IR, TGA and DSC methods. In comparison to the untreated material, such treatment led to a considerable increase in adsorption capacity towards heavy metal ions from aqueous solution. The quantity adsorbed increased with pH, initial metal ion concentration and immersion time. The formation of a 1: 1 complex between the amidoxime group and Cu(II), Cr(III) and Cd(II) ions and a 2:1 complex with the Ni(II) ion was demonstrated by the adsorption limit values. Overall, Am-WS and Am-WF exhibited similar behaviour to Am-Cell and are suitable for the treatment of wastewaters containing heavy metal ions.

Keywords: Amidoximated Cellulose, Sawdust Adsorption, Aqueous-Solutions, Removal, Carbon, Derivatives, Copper(II), Complexes, Waste, Barks

Özcan, A., Sahin, M. and Özcan, A.S. (2005), Adsorption of nitrate ions onto sepiolite and surfactant-modified sepiolite. *Adsorption Science & Technology*, **23** (4), 323-333.

Full Text: [2005\Ads Sci Tec23, 323.pdf](2005/Ads%20Sci%20Tec23,%20323.pdf)

Abstract: The adsorption of nitrate ions onto clay minerals has not been given much attention, possibly because clay surfaces are negatively charged. In order to increase the positive charge on the surface, sepiolite was modified in the present studies by treatment with dodecylethyldimethyl ammonium (DEDMA) bromide. After such modification, it was found that the maximum amount of nitrate ion adsorbed occurred at a pH value of 2.0.

The chemical composition of natural sepiolite was determined by EDX methods and surface characterization of both natural and modified sepiolite samples was undertaken using FT-IR spectroscopic techniques. The adsorption of nitrate ions onto these adsorbents was determined by ion chromatography. The kinetic parameters of the adsorption process were calculated and it was shown that the reaction kinetic data could be fitted using the pseudo-second-order rate model. The calculated results indicate that both natural and surfactant-modified sepiolite are effective sorbents for the removal of anionic contaminants; however, the surfactant-modified sepiolite (453 mmol/kg) was more effective than the unmodified sepiolite (408 mmol/kg) in this respect. The adsorption data obtained were well described by the Freundlich adsorption isotherm.

Keywords: Adsorption, Adsorption Isotherm, Ammonium, Aqueous-Solution, Cations, Characterization, Chemical, Chemical Composition, Chromatography, Clay, Clay Minerals, Composition, Contaminants, FT-IR, FTIR, Inorganic Anions, Ion, Ion Chromatography, Isotherm, Kinetic, Kinetic Parameters, Mechanism, Methylene-Blue, Model, Model-Calculations, Natural, Nitrate, Organo-Clays, Parameters, pH, Quaternary Ammonium, Reaction, Removal, Sepiolite, Sorption, Surfaces, Techniques, Treatment

Sun, Y., Chen, J.L., Li, A.M., Liu, F.Q. and Zhang, Q.X. (2005), Adsorption of phenol from aqueous solution by aminated hypercrosslinked polymers. *Adsorption Science & Technology*, **23** (4), 335-345.

Full Text: [2005\Ads Sci Tec23, 335.pdf](2005/Ads%20Sci%20Tec23,%20335.pdf)

Abstract: The adsorption of phenol from aqueous solution onto the hyper-crosslinked polymeric adsorbent NDA-100 and its dimethylamine aminated derivatives AH-1, AH-2 and AH-3, the commercial resin Amberlite XAD-4 and the weakly basic anion-exchange resin D301 was compared. of the tested polymers, the aminated hypercrosslinked resins had the highest adsorption capacities. The empirical Freundlich equation was successfully employed to describe the adsorption process. The specific surface area and the micropore structure of the adsorbent together with the tertiary amino group on the matrix affected the adsorption performance towards phenol. Furthermore, these factors also influenced the thermodynamic properties. Kinetic studies demonstrated that the presence of the tertiary amino group on the polymer matrix decreased the adsorption rate and increased the apparent activation energy of the adsorption process.

Keywords: Naphthalene Derivatives, Waste-Water, Resins, Equilibrium, Adsorbents

? Qadeer, R. (2005), Temperature effects associated with the adsorption of neodymium ions onto activated charcoal. *Adsorption Science & Technology*, **23** (5), 399-405.

Full Text: [2005\Ads Sci Tec23, 399.pdf](2005/Ads%20Sci%20Tec23,%20399.pdf)

Abstract: The temperature dependence of the kinetics of the adsorption of neodymium ions from aqueous solution onto activated charcoal has been studied. The results obtained indicate that a form of equilibration appears to be attained after ca. 30 min although further very slow changes may occur over a much longer period. The adsorption process is controlled by the diffusion of neodymium ions into the pores of the activated charcoal. Adsorption follows first-order kinetics with an activation energy of 13.09 kJ/mol. Values of the equilibrium constant for the adsorption of neodymium ions onto activated charcoal increase with increasing temperature, thereby indicate the endothermic nature of the process.

Keywords: Activated Charcoal, Activation, Activation Energy, Adsorption, Aqueous Solution, Changes, Diffusion, Electrolytic Aqueous-Solutions, Endothermic, Equilibration, Equilibrium, First-Order Kinetics, Kinetics, Selective Adsorption, Solution, Temperature

? Peng, X.J., Luan, Z.K., Zhang, H.M., Tian, B.H. and Fan, B. (2005), Adsorption of p-nitrophenol onto PDMDAAC-modified bentonites. *Adsorption Science & Technology*, **23** (5), 407-415.

Full Text: [2005\Ads Sci Tec23, 407.pdf](2005/Ads%20Sci%20Tec23,%20407.pdf)

Abstract: A novel organobentonite was prepared by modifying bentonite with poly(dimethyldiallylammonium chloride) (PDMDAAC), a harmless and cost-effective type of polycation. Zeta potential and X-ray diffraction measurements suggest that PDMDAAC was intercalated into the bentonite interlayer space. PDMDAAC-bentonite has been found to be effective for the removal of p-nitrophenol with a removal rate of 81.4% being achieved. The adsorption process was pH-dependent and was slightly decreased by the Ca2+ and Mg2+ ions co-existing in the solution. A dual-phase adsorption mechanism was suggested for the process. The adsorbents obtained from the regeneration of PDMDAAC-bentonite still exhibit good adsorption capacities.

Keywords: Adsorption, Bentonite, Chloride, Measurements, Mechanism, Organic Contaminants, Regeneration, Removal, Sorption, Water, X-Ray Diffraction

? Mori, T., Kuroda, Y., Kumashiro, R., Hirata, K., Toyota, H. and Nagao, M. (2005), Calorimetric and spectroscopic studies of water adsorption onto alkaline earth fluorides. *Adsorption Science & Technology*, **23** (6), 425-436.

Full Text: [2005\Ads Sci Tec23, 425.pdf](2005/Ads%20Sci%20Tec23,%20425.pdf)

Abstract: Interactions between the surfaces of alkaline earth fluorides (CaF2, SrF2 and BaF2) and water molecules were investigated by calorimetric and spectroscopic methods. The exposed surfaces of the alkaline earth fluoride samples, with which the (100) crystalline plane is mainly associated, were found to be fully covered with strongly adsorbed water molecules, resulting in characteristic IR bands at 3684, 2561, 1947 and 1000 cm-1, respectively. This surface was homogeneous towards further water adsorption. The strongly adsorbed water molecules were almost completely desorbed front the surface on evacuating the sample up to 473 K. The heat of immersion in water also increased with increasing pretreatment temperature; this may be attributed to surface rehydration of the alkaline earth fluorides. The state of the surface changed drastically as the pretreatment temperature was increased and stabilized towards incoming water molecules. Thus, the surface formed after evacuation at temperatures greater than 473 K was resistant to hydration even after immersion in water at room temperature. This surface was relatively heterogeneous towards water adsorption, although it behaved homogeneously towards argon adsorption. These facts indicate that strongly adsorbed water molecules appear to be somewhat specific towards the adsorption of further incoming water molecules. The adsorption properties of the (100) plane of alkaline earth fluorides towards water and argon molecules depend strongly on both the electrostatic field strength and the extent of rehydration of the alkaline earth fluoride surface.

Keywords: 2-Dimensional Condensation, CaF2, Chemisorbed Water, Immersion, Metal-Oxides, SrF2, Surface, Titanium-Dioxide, Two-Dimensional Condensation, Zinc Oxide

? El-Geundi, M.S., Farrag, T.E. and Abd El-Ghany, H.M. (2005), Adsorption equilibrium of a herbicide (pendimethalin) onto natural clay. *Adsorption Science & Technology*, **23** (6), 437-453.

Full Text: [2005\Ads Sci Tec23, 437.pdf](2005/Ads%20Sci%20Tec23,%20437.pdf)

Abstract: The equilibrium adsorption of a herbicide (pendimethalin) onto natural clay from aqueous solutions was studied experimentally using different system variables. The influence of such variables, such as particle size (dp), pH and temperature, on the adsorption capacity was studied. Equilibrium modelling was carried out using the Langmuir, Freundlich and Redlich–Peterson models with the corresponding constants being calculated for the different system variables. The results indicate that the maximum adsorption capacity (qmax) at an acidic pH value (3.44) was approximately double that observed at an alkaline pH value (9.62). It was also found that the effect of particle size was significant and that the temperature plays an interesting role in the adsorption process. The enthalpy change (ΔH) for adsorption was evaluated as −29.36 kJ/mol. It is clear from the results of this study that the Freundlich model fitted the experimental adsorption data significantly better than the Langmuir or the Redlich–Peterson models.

? Ahmad, R., Hasany, S.M. and Chaudhary, M.H. (2005), Adsorption characteristics of Cr(III) ions onto coconut husk from aqueous solution. *Adsorption Science & Technology*, **23** (6), 467-477.

Full Text: [2005\Ads Sci Tec23, 467.pdf](2005/Ads%20Sci%20Tec23,%20467.pdf)

Abstract: The adsorption of chromium(III) ions onto coconut (Cocos nucifera) husk has been studied using radiotracer and batch techniques. Maximum adsorption (ca. 91%) of Cr(III) ions (2.59×10−5 M) onto the adsorbent surface from deionised water was achieved in 30 min when 100 mg coconut husk was employed. The Langmuir, Freundlich and Dubinin–Radushkevich (D–R) isotherms all provided an accurate fit of the adsorption data. The Langmuir constants, i.e. Q = 18.25±0.55 μmol/g and b = (2.57±0.15)×104 l/mol, were computed. Similarly, application of the D–R isotherm led to an adsorption capacity of 0.25±0.03 mmol/g, a β value of −0.005352±0.000360 kJ2/mol2 and an adsorption energy of 9.67±0.33 kJ/mol. Use of the Freundlich isotherm allowed the constants 1/n = 0.85±0.05 and A = 58.6±36.8 mmol/g to be estimated. Studies of the variation of adsorption with temperature gave ΔH = 10.8±0.8 kJ/mol, ΔS = 48.8±2.7 J/(mol K) and ΔG = −4.6±0.03 kJ/mol at 25°C. Addition of the divalent ions Ba, Co, Pb, Ni and sulphate to the aqueous solution led to an increase in adsorption whilst the presence of borate, carbonate and oxalate ions reduced the adsorption significantly. The use of Zr(IV), I(I), Se(IV) and Tc(VII) ions led to a low adsorption capacity. The results showed that coconut husk can be used to separate Cr(III) ions from all these various ions via a single or multistage operation.

? Zhang, H.X., Guo, Z.W. and Tao, Z.Y. (2005), Factors affecting the adsorption of 60Co onto a peat from China. *Adsorption Science & Technology*, **23** (6), 479-485.

Full Text: [2005\Ads Sci Tec23, 479.pdf](2005/Ads%20Sci%20Tec23,%20479.pdf)

Abstract: The work described was aimed at an analysis of the principal factors affecting the adsorption of 60Co ions onto a peat front Lin Tao County (in the south of Gansu Province, P. R. China). The adsorption of 60Co ions onto the peat was studied as a function of contact time, ratio of solution volume (V) to solid mass (in), pH, ionic strength and the initial concentration of Co ions. It was found that the relative adsorption rate was quite rapid, that adsorption gradually decreased with increasing values of Win and that ionic strength had a moderate effect on the process. In addition, the pH value strongly influenced the extent of adsorption. Over the high concentration range, the adsorption equilibrium could be described by the Freundlich equation, with this equation being reduced to the Henry equation, i.e. a linear adsorption isotherm, over the low concentration range. No attempt has been made at understanding the mechanism of 60Co ion adsorption onto peat in the present work.

Keywords: Metal-Ions, Sorption

? Ceylan, H., Şahan, T., Gürkan, R. and Kubilay, Ş. (2005), Removal of some heavy metal cations from aqueous solution by adsorption onto natural kaolin. *Adsorption Science & Technology*, **23** (7), 519-534.

Full Text: [2005\Ads Sci Tec23, 519.pdf](2005/Ads%20Sci%20Tec23,%20519.pdf)

Abstract: The adsorption removal of some heavy metal cations such as Cu(II), Zn(II) and Co(II) from aqueous solution onto kaolin has been studied using the batch method with initial metal ion concentrations within the range 15–70 mg/l. The percentage adsorption and equilibrium concentrations were determined by means of atomic absorption flame photometry as a function of adsorbate concentration, pH and temperature.

Ion-exchange studies showed that over the complete concentration range studied the adsorption ratios for metal cations adsorbed onto kaolin correlated with the linear forms of the Langmuir, Freundlich and Dubinin–Kaganer–Radushkevich (DKR) adsorption isotherms. The cation-exchange capacity of kaolin towards each metal ion studied was evaluated. It was found that the adsorption phenomena depended on the charge density and diameter of the hydrated ion. The equilibrium studies demonstrated that the selectivity of the ions followed the sequence Zn(II) > Cu(II) > Co(II) at pH 7.0. Calculation of thermodynamic parameters such as the standard enthalpy (ΔH0), Gibbs free energy (ΔG0) and entropy (Δ S0) showed that the adsorption of the heavy metal ions studied onto kaolin was an endothermic process which was favoured at higher temperatures.

These results show that natural kaolin has a considerable potential for the removal of heavy metal cationic species from aqueous solution and wastewater.

? Baouab, M.H.V., Khalfaoui, M., Bartegi, A. and Gauthier, R. (2005), Immobilization of residual basic dyes onto polyamide ion-exchanger materials. *Adsorption Science & Technology*, **23** (7), 555-572.

Full Text: [2005\Ads Sci Tec23, 555.pdf](2005/Ads%20Sci%20Tec23,%20555.pdf)

Abstract: This paper reports the preparation of methacrylic acid-grafted nylon (MAA–nylon) by treating nylon-6,6 fibres with methacrylic acid (MAA) and the use of this modified polyamide as an ion-exchanger for the immobilization of pollutant basic dyes. The grafting of MAA onto nylon-6,6 was demonstrated both by weight uptake and atomic force microscopy. The exchange capacity of MAA–nylon was evaluated by potentiometric titration of the acidic groups. Five MAA–nylon fibres with different degrees of grafting (20–80%) were tested for the adsorption of two basic dyes, viz. Basic Blue 3 and Basic Red 24. Such adsorption was monitored by visible spectroscopy. The adsorption capacity was found to depend on the degree of grafting and on the temperature. The experimental data were fitted using the Langmuir and Freundlich models. However, an improved fit could be obtained by using the Jossens model.

? Seida, Y. and Izumi, Y. (2005), Synthesis of clay–cerium hydroxide conjugates for the adsorption of arsenic. *Adsorption Science & Technology*, **23** (8), 607-618.

Full Text: [2005\Ads Sci Tec23, 607.pdf](2005/Ads%20Sci%20Tec23,%20607.pdf)

Abstract: Insoluble clay–cerium hydroxide conjugates exhibiting only limited swelling in water were synthesized for the removal of arsenic ions from aqueous solution. Thus, cerium hydroxide was immobilized electrostatically on the inner layer of highly dispersed Na-montmorillonite (clay). The clay + Ce(OH)n conjugate was prepared by intercalating colloidal cerium hydroxide in the clay inner layer. Similarly, the clay + Ce→OH conjugate was prepared by introducing cerium ions into the clay followed by their hydrolysis.

The intercalation of cerium hydroxide and the chemical state of the cerium ion in the clay were evaluated via X-ray diffraction and X-ray absorption fine structure (XAFS) measurements. The conjugates exhibited a mesoporous structure with a high specific surface area of ca. 85–100 m2/g. These conjugates adsorbed As(III) and As(V) in a similar manner from aqueous solutions of As2O3 and KH2AsO4, respectively, over the pH range 4–8. The adsorption isotherms for As(III) and As(V) onto the conjugates were Langmuirian in shape. They exhibited large values for the Langmuir constant, K, thereby indicating the effectiveness of the conjugates in the removal of arsenic ions from dilute aqueous solutions. The adsorption capacity of the clay + Ce→OH conjugate was superior to that of the clay + Ce(OH)n conjugate. Co-existing anions in the aqueous solutions such as chloride, carbonate, sulphate and phosphate had little effect on the removal of arsenic.

? Nowicki, W. and Nowicka, G. (2005), Determination of the parameters of Langmuir-type isotherms by the frontal analysis method. some identification aspects. *Adsorption Science & Technology*, **23** (8), 619-631.

Full Text: [2005\Ads Sci Tec23, 619.pdf](2005/Ads%20Sci%20Tec23,%20619.pdf)

Abstract: The applicability of the classical frontal analysis method for the estimation of the parameters of various Langmuirian-type adsorption isotherms was examined. Elution profiles corresponding to several adsorption models were simulated using the equilibrium/dispersive model of chromatography. A noise sequence was added to the calculated profiles to simulate the detector error, following which the isotherm parameters were derived back from the generated chromatograms. The uncertainty of the estimates is discussed critically in terms of the standard deviations from the mean and real values of the parameters.

? Wang, H.L., Chen, J.L. and Zhang, Q.X. (2006), Adsorption of an amphoteric aromatic compound (*p*-aminobenzoic acid) onto different polymeric adsorbents. *Adsorption Science & Technology*, **24** (1), 17-28.

Full Text: [2006\Ads Sci Tec24, 17.pdf](2006/Ads%20Sci%20Tec24,%2017.pdf)

Abstract: The adsorptive properties of p-aminobenzoic acid onto macroporous, hypercrosslinked and multi-functional polymeric adsorbents were investigated systematically in the present study in relation to the particular physicochemical characteristics of an aromatic amphoteric compound containing both Lewis acid and Lewis base functional groups. A comparison of the thermodynamic and kinetic behaviours of the adsorbate towards three different polymeric adsorbents was made. It was found that the equilibrium adsorption data for the three polymeric adsorbents were well fitted by the empirical Freundlich isotherm. The results showed that the adsorption capacity of the multi-functional polymeric adsorbent NJ-99 was the largest among the three adsorbents studied. This may be attributed to strong hydrogen-bonding interaction and electrostatic interaction between the amino groups on the resin and the carboxyl group of p-aminobenzoic acid. In contrast, because of its smaller micropore volume, the adsorption capacity of macroporous XAD-4 was lower than that of the hypercrosslinked adsorbents CHA-111 and NJ-99. Calculation of the sorption enthalpy changes enabled the adsorption mechanism to be interpreted. In addition, a kinetic study of the sorption of p-aminobenzoic acid onto NJ-99 was also undertaken. The results showed that the adsorption process was mainly controlled by intraparticle diffusion.

Keywords: Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorptive Properties, Aqueous-Phase Adsorption, Capacity, Changes, Comparison, Diffusion, Dyes, Enthalpy, Equilibrium, Freundlich, Freundlich Isotherm, Interaction, Intraparticle Diffusion, Isotherm, Isotherms, Kinetic, Kinetic Study, Macroporous, Mechanism, Naphthalene Derivatives, Phenolic-Compounds, Polymeric, Polymeric Adsorbent, Resin, Resins, Sorption, Styrene-Divinylbenzene Copolymers, Thermodynamic, XAD-4

? Xu, C., Long, C., Li, A.M., Liu, F.Q., Yang, W.B. and Zhang, Q.X. (2006), Adsorption characteristics of fumaric acid onto weakly basic hypercrosslinked polystyrene ion-exchangers. *Adsorption Science & Technology*, **24** (1), 65-77.

Full Text: [2006\Ads Sci Tec24, 65.pdf](2006/Ads%20Sci%20Tec24,%2065.pdf)

Abstract: A new weakly basic ion-exchanger (called XC-11), with a hypercrosslinked macroporous polystyrene matrix and a high specific surface area, was synthesized. When traditional weakly basic ion-exchange resins were employed in adsorption experiments, it was found that their sphericity after attrition decreased drastically when they were used ten times cyclically to adsorb and desorb famaric acid from actual manufacturing effluent. This indicated that a traditional weakly basic exchange resin could not be applied in practice for the recovery of fumaric acid from industrial wastewater. However, the mechanical strengths of the self-synthesized new weakly basic ion-exchanger XC-11 and the hypercrosslinked polymeric adsorbent NDA-150 remained virtually unchanged under the same conditions, indicating their feasibility for practical applications.

Thus, the adsorption of fumaric acid from aqueous solutions onto XC-11 and the commercially available hypercrosslinked polymeric adsorbent (NDA-150) taken as a reference was investigated from both a dynamic and thermodynamic standpoint. Favourable adsorption behaviour towards fumaric acid was observed with both adsorbents, the equilibrium adsorption data obtained being very well fitted by the Freundlich model. ne corresponding Freundlich constants, K, and free energy changes, Delta G, indicated that the adsorption capacity of XC-11 towards fumaric acid was greater than that of NDA-150.The pseudo-first-order and pseudo-second-order kinetic models were applied to describe the kinetic data, with the pseudo-second-order model providing a perfect fit. It was also found that the adsorption of fumaric acid onto XC-11 proceeded faster than the corresponding process onto NDA-150.

Keywords: Adsorption, Aqueous-Solution, Equilibria, Ion Exchange, Kinetic Models, Model, Pseudo-Second-Order, Recovery, Sorbents, Sorption, Waste-Water Treatment, Wastewater

? Kobya, M., Demirbas, E., Yesilot, S. and Baskaya, R. (2006), Adsorption kinetics for the removal of nitrite ions from aqueous solutions by an ion-exchange resin. *Adsorption Science & Technology*, **24** (2), 131-141.

Full Text: [2006\Ads Sci Tec24, 131.pdf](2006/Ads%20Sci%20Tec24,%20131.pdf)

Abstract: The adsorption kinetics of nitrite ions in aqueous solutions onto an anion-exchange resin A-250 was explored in a well-stirred tank. The capacity of the ion-exchange resin for the removal of nitrite ions from aqueous solution was investigated under different conditions, viz. initial concentration (10-50 mg/l), pH (2-8), particle size (565-850 μm) and resin dosage (2-8 g/l). A number of kinetic models such as those of external and intraparticle diffusion were applied to the results from this study in order to identify the adsorption mechanism.

The results correlated well with the intraparticle diffusion model. The experimental parameters had an effect on the effective pore and surface diffusivities. Adsorption of nitrite ions onto the resin showed that the latter could be used as an efficient adsorbent material for the removal of nitrite ions from aqueous solutions.

Keywords: Waste-Water, Sorption, Chitosan, Equilibrium, Diffusion, Adsorbent, Systems, Dye

? Nityanandi, D. and Subbhuraam, C.V. (2006), Adsorptive removal of Pb(II) ions from aqueous solution using a coir-based product (Puresorbe). *Adsorption Science & Technology*, **24** (2), 177-191.

Full Text: [2006\Ads Sci Tec24, 171.pdf](2006/Ads%20Sci%20Tec24,%20171.pdf)

Abstract: The effectiveness of Pb(II) ion removal from wastewater by adsorption methods has made this an ideal alternative to other expensive treatment options. This paper describes an investigation using a coir-based adsorbent (Puresorbe) for the removal of Pb(II) ions from aqueous solution. The adsorption of Pb(II) ions was studied varying parameters such as the agitation time, the metal ion concentration, the adsorbent dose, the temperature and the pH of the aqueous solution. The experimental isotherm data were analyzed using the Langmuir, Freundlich, Dubinin-Radushkevich (D-R) and Tempkin isotherms. For a particle size of 250-500 mu m at pH 3.0, the adsorption process followed second-order kinetics. The monolayer adsorption capacity at 30°C was 55.81 mg Pb(H) ion, g Puresorbe. The thermodynamic parameters showed the endothermic nature of Pb(II) ion adsorption. Desorption studies carried out using distilled water adjusted to a pH value of 2.0-7.0 suggested that the adsorption mode could be ion exchange. As the adsorbent raw material is discarded as waste during coir processing, usage of this material is expected to be economically viable.

Keywords: Activated Carbon, Adsorbent, Adsorbent Dose, Adsorption, Adsorption Capacity, Alternative, Aqueous Solution, Cadmium, Capacity, Desorption, Effectiveness, Endothermic, Experimental, Freundlich, Heavy-Metals, Investigation, Ion Exchange, Ion-Exchange, Isotherm, Isotherms, Kinetics, Langmuir, Lead, Metal, Methods, Monolayer, Montmorillonite, Particle Size, Pb(II), Pb(II) Ions, pH, Precipitation, Removal, Second-Order, Second-Order Kinetics, Size, Solution, Sorption, Temperature, Thermodynamic, Thermodynamic Parameters, Toxic Metal-Ions, Treatment, Waste, Wastewater, Water

? Nadeem, M., Tan, I.B., Haq, M.R.U., Shahid, S.A., Shah, S.S. and McKay, G. (2006), Sorption of lead ions from aqueous solution by chickpea leaves, stems and fruit peelings. *Adsorption Science & Technology*, **24** (3), 269-282.

Full Text: [2006\Ads Sci Tec24, 269.pdf](2006/Ads%20Sci%20Tec24,%20269.pdf)

Abstract: Leaves, stems and fruit peelings of chickpea (Cicer arientinum L.) were successfully utilized for the accumulation of lead ions from aqueous solutions onto their surfaces. The rate and extent of accumulation were affected by pH, particle size, contact time and the initial concentration of Pb(II) ions, respectively. The sorption capacities of leaves, stems and fruit peelings towards Pb(II) ions were found to be 81.30, 80.10 and 53.26%, respectively, at an initial Pb(II) ion concentration of 200 mg/dm3, optimum pH conditions of 6.0, a particle size of 0.354 min and a contact time of 120 min. Most of the sorption occurred within the first 15 min and attained a maximum value after 120 min. The Bangham equation was used to express the adsorption mechanism. The adsorption rates of Pb(II) ions were found to decrease in the order: leaves > stems > fruit peelings. Possible cell-metal ion interactions may be due to the involvement of -COOH, -OH and -NH groups in the sorption process. The obtained sorption data were well fitted by the Freundlich and Langmuir adsorption isotherms, respectively. The results showed that chickpea leaves and stems behave as good adsorbents for the removal of Pb(II) ions from aqueous solution.

Keywords: Agricultural Residues, Carbonaceous Sorbent, Activated Carbon, Basic-Dyes, Rice Husk, Removal, Adsorption, Waste, Effluent, Water

? Chen, L., Yu, X.J., Zhao, Z.D. and Dong, Y.H. (2006), The sorption of Th(IV) ions onto montmorillonite: the effect of ph, ionic strength and fulvic acid. *Adsorption Science & Technology*, **24** (4), 301-310.

Full Text: [2006\Ads Sci Tec24, 301.pdf](2006/Ads%20Sci%20Tec24,%20301.pdf)

Abstract: Thorium was considered as a chemical analogue of other tetravalent actinides. The sorption of Th(IV) ions onto montmorillonite and its cross-linked counterpart in the presence/absence of fulvic acid was investigated via a batch technique as a function of pH and fulvic acid concentration. The results obtained indicate that the sorption of Th(IV) ions was strongly dependent on the pH value of its solution, with the presence of fulvic acid enhancing such sorption at low pH values. It was also found that the sorption of Th(IV) ions was dependent on the ionic strength. Cross-linked montmorillonite was found to be a suitable candidate for the sorption and pre-concentration of Th(IV) ions from large volumes of liquid solution. Surface complexation rather than cation exchange mainly contributes to the sorption of Th(IV) ions onto montmorillonite.

? Keskinkan, O. (2006), Isotherm models for predicting the dye adsorption potential of coon tail (*Ceratophyllum demersum*) and water milfoil (*Myriophyllum spicatum*). *Adsorption Science & Technology*, **24** (4), 321-336.

Full Text: [2006\Ads Sci Tec24, 321.pdf](2006/Ads%20Sci%20Tec24,%20321.pdf)

Abstract: The dye adsorption potential and characteristics of the submerged aquatic plants *Ceratophyllum demersum* and *Myriophyllum spicatum* were investigated using an azo dye (Basic Blue 41 - BB41). Adsorption equilibria were attained after 160 min at various initial BB41 concentrations (in the range 5-80 mg/l). Attempts were made to fit the equilibrium data obtained using the Langmuir, Freundlich, Redlich-Peterson, Temkin and Dubinin-Radushkevich adsorption isotherm models. The data obtained from the *C. demersum* and *M. spicatum* studies were fitted exactly by the Redlich-Peterson and Temkin adsorption isotherms models with correlation coefficient (r) values of 0.999 and 0.981, respectively. The fits of the Langmuir and Freundlich adsorption isotherm models were also acceptable. Evaluation of the experimental data using the Langmuir equation revealed that the maximum adsorption capacities of *C. demersum* and *M. spicatum* were 50.0 mg/g and 64.9 mg/g, respectively.

? O’Connell, D.W., Birkinshaw, C. and O’Dwyer, T.F. (2006), Removal of lead(II) ions from aqueous solutions using a modified cellulose adsorbent. *Adsorption Science & Technology*, **24** (4), 337-348.

Full Text: [2006\Ads Sci Tec24, 337.pdf](2006/Ads%20Sci%20Tec24,%20337.pdf)

Abstract: A series of adsorption studies were carried out on a glycidyl methacrylate-modified cellulose material functionalised with imidazole (cellulose-g-GMA-imidazole) to assess its capacity towards the removal of Pb(II) ions from aqueous solution. The study sought to establish the effect of a number of parameters on the removal of Pb(II) ions from solution by the cellulose-g-GMA-imidazole. The effect of initial metal concentration, contact time and solution temperature on the removal of Pb(II) ions from solution by the cellulose-g-GMA-imidazole was assessed. Cellulose-g-GMA-imidazole sorbent showed an uptake of ca. 72 mg/g of Pb(II) ions from aqueous solution at 23°C. The adsorption process is best described by the Langmuir adsorption model and the thermodynamics of the process suggest that the binding process is exothermic. The kinetics of the adsorption process indicated that the uptake of Pb(II) ions occurred within 40 min and that pseudo-second-order kinetics best describe the overall adsorption process.

? Ncibi, M.C., Mahjoub, B. and Seffen, M. (2006), Studies on the biosorption of textile dyes from aqueous solutions using *Posidonia oceanica* (L.) leaf sheath fibres. *Adsorption Science & Technology*, **24** (6), 461-473.

Full Text: [2006\Ads Sci Tec24, 461.pdf](2006/Ads%20Sci%20Tec24,%20461.pdf)

Abstract: The adsorption of two textile dyes onto a low-cost and unexploited marine biomass, *Posidonia oceanica* (L.), was investigated in batch mode. The biosorption process was studied as a function of contact time, initial pH and temperature. The highest dye adsorption capacities attained at 30°C were 3.081 mg/g at pH 2 for the Direct dye and 4.252 mg/g at pH 5 for the Reactive dye. The Freundlich, Langmuir and Redlich-Peterson adsorption models were used to determine the parameters of the equilibrium data and, under the operating conditions studied, the best fit to the experimental curves was obtained using the Freundlich model. The thermodynamic constants of the adsorption process (i.e. Delta G(0), Delta H-0 and Delta S-9) were evaluated as -6.36 kJ/mol, 57.80 kJ/mol and -103.45 J/(mol K), respectively, for the Direct dye and as -3.22 kJ/mol, 84.10 kJ/mol and -225.55 J/(mol K), respectively, for the Reactive dye. Consequently, the adsorption of dyes onto P oceanica biomass was favourable, endothermic and spontaneous.

Keywords: Reactive Dye, Activated Carbon, Organic Pollutants, Coir Pith, Congo-Red, Adsorption, Removal, Waste, Biomass, Water

? Ahmed, R., Yamin, T., Ansari, M.S. and Hasany, S.M. (2006), Sorption behaviour of lead(II) ions from aqueous solution onto Haro river sand. *Adsorption Science & Technology*, **24** (6), 475-486.

Full Text: [2006\Ads Sci Tec24, 475.pdf](2006/Ads%20Sci%20Tec24,%20475.pdf)

Abstract: The sorption of lead(II) ions onto Haro river sand has been studied using voltammetric methods as well as the effect of different acid concentrations on the sorption process. The maximum sorption of Pb(II) ions onto the adsorbent surface was achieved from de-ionized water. It was found that the sorption data could be fitted by the Freundlich and Dubinin-Radushkevich (D-R) isotherms. Values of 1/n = 0.71±0.003 and of A = 15.4±6.86 mmol/g were estimated from the Freundlich isotherm while the D-R isotherm gave β = −0.00478±0.00022 mol2/kJ2, Xm = 23.26±0.05×10−2 mmol/g and E = 10.23±0.23 kJ/mol. The influence of temperature on the sorption process over the temperature range 283-323 K under optimized conditions yielded ΔH° = 24.87±0.44 kJ/mol, ΔS° = 95.8±1.5 J/(mol K) and ΔG° = −3.6±0.02 kJ/mol at 298 K. These values demonstrate the endothermic and spontaneous nature of the sorption process. The addition of chloride, calcium or zinc ions to the system enhanced the sorption of Pb(II) ions whereas the corresponding addition of sulphate, cadmium, copper(II) or chromium(III) ions tended to reduce the extent of sorption.

Keywords: Adsorbent, Aqueous Solution, Behaviour, Cadmium, Cadmium(II), Calcium, Chloride, Chromium(III), Copper(II), Endothermic, Freundlich, Freundlich Isotherm, Isotherm, Isotherms, Lead(II), Methods, Pb(II), Pb(II) Ions, Removal, Sand, Solution, Sorption, Sorption Process, Stripping Voltammetry, Temperature, Water, Zinc

? Hajialigol, S., Taher, M.A. and Malekpour, A. (2006), A new method for the selective removal of cadmium and zinc ions from aqueous solution by modified clinoptilolite. *Adsorption Science & Technology*, **24** (6), 487-496.

Full Text: [2006\Ads Sci Tec24, 487.pdf](2006/Ads%20Sci%20Tec24,%20487.pdf)

Abstract: Natural and modified clinoptilolite were used to remove zinc and cadmium ions from aqueous solution. The raw material was characterized by XRD and XRF analysis. Clinoptilolite was modified with benzyldimethyltetradecylammonium chloride (BDTA) to increase the adsorption of neothorin [2-(2-arsenophenylazo)chromotropic acid disodium salt, C10H11AsN2Na2O11S2]. All experiments were undertaken using a continuous method. The ultimate goal of these studies was the selective removal of trace amounts of Cd(II) and Zn(II) ions from aqueous solution using a modified form of clinoptilolite.

The results obtained showed that Cd(II) and Zn(II) ions were adsorbed quantitatively onto modified clinoptilolite over the respective pH ranges of 4.0-5.4 and 3.3-4.5. The influence on the adsorption process of various parameters such as the ionic concentration, the flow rate, the particle size, the pH value and the presence of other cations was studied to obtain the optimum conditions. Although clinoptilolite and its surfactant-modified form were not capable of the selective adsorption of the cations studied, on the basis of the results obtained it was possible to selectively remove Zn(II) and Cd(II) ions from aqueous solution by modified clinoptilolite using a two-step process, i.e. initial treatment with BDTA followed by treatment with neothorin.

? El Hammari, L., Laghzizil, A., Saoiabi, A., Barboux, P., Meyer, M., Brandès, S. and Guilard, R. (2006), Some factors affecting the removal of lead(II) ions from aqueous solution by porous calcium hydroxyapatite: relationships between surface and adsorption properties. *Adsorption Science & Technology*, **24** (6), 507-516.

Full Text: [2006\Ads Sci Tec24, 507.pdf](2006/Ads%20Sci%20Tec24,%20507.pdf)

Abstract: A porous hydroxyapatite (p-HAp) was prepared and employed for the removal of lead(II) ions at different concentrations from aqueous solution to determine the adsorption properties of p-HAp and compare them with those of a commercial hydroxyapatite (CAp) sample. The kinetic data obtained indicated that the adsorption performances of the adsorbents depended both on their specific surface area and crystallinity. Complexation of the Pb(II) ion on the adsorbent surface favoured the dissolution of hydroxyapatites characterized by a Ca/Pb molar ratio in the 0.85-1.5 range. The maximum adsorption capacity of p-Hap for Pb(II) ions at 30±2°C was 2.30 mmol/g relative to 1.38 mmol/g for the commercial compound Cap at the same temperature. The higher capacity of p-HAp was explained in terms of its porosity and crystallinity. The Pb(II) ions sorption results could be modelled by the Langmuir and Freundlich isotherms.

? Wang, X.S., Wang, J. and Sun, C. (2006), Removal of lead(II) ions from aqueous solutions using a modified cellulose adsorbent. *Adsorption Science & Technology*, **24** (6), 517-530.

Full Text: [2006\Ads Sci Tec24, 517.pdf](2006/Ads%20Sci%20Tec24,%20517.pdf)

Abstract: The potential of the low-cost adsorbent kaolinite for removing copper(II) ions from aqueous solutions was thoroughly investigated. The effects of relevant parameters, i.e. pH, adsorbent concentration, ionic strength and solution temperature, on the adsorption capacity were examined. The adsorption data followed the Freundlich, Langmuir and Dubinin-Radushkevich (D-R) isotherms. The maximum adsorption capacity was found to be 16.79 mg/g at a pH value of 6.0, an initial Cu(II) ion concentration of 40 mg/dm3 and a temperature of 313 K. Various thermodynamic parameters, viz. the standard free energy change (ΔG°), the enthalpy (ΔH°) and the entropy (ΔS°), were evaluated for the process with the results indicating that it was spontaneous and endothermic in nature.

The dynamics of the adsorption process were also studied and values of the adsorption rate constant and the rate constant for intraparticle diffusion calculated. The activation energy (ΔEa) was found to be 19.84 kJ/mol in the present study, indicating a chemical adsorption process involving weak interactions between the adsorbent and the adsorbate. The interaction between Cu(II) ions and kaolinite is mainly attributable to ion exchange. The adsorption capacity increased with increasing solution pH, decreasing ionic strength and decreasing adsorbent concentration. Kaolinite can be used to separate Cu(II) ions from aqueous solutions.

Keywords: Sorption Isotherms, Heavy-Metals, Rice Bran, Tree Fern, Adsorption, Equilibrium, Biosorption, Zeolites, Zinc, Adsorbents

? Hubicki, Z. and Wojcik, G. (2006), Studies of the selective removal of micro-quantities of platinum(IV) ions from macro-quantities of model solutions of aluminium, copper, iron, nickel and zinc chloride on anion-exchangers of various types. *Adsorption Science & Technology*, **24** (7), 559-569.

Full Text: [2006\Ads Sci Tec24, 559.pdf](2006/Ads%20Sci%20Tec24,%20559.pdf)

Abstract: Platinum has been widely applied as an industrial catalyst and consequently the recovery of noble metals from industrial wastes has become an economic issue. In the present studies, laboratory tests were undertaken to examine the selective removal of micro-quantities of platinum(IV) from I M solutions of aluminium, copper, iron, nickel and zinc chloride in 0.1 M hydrochloric acid using anion-exchangers containing tertiary amine group functions (Amberlite IRA-67 and Amberlite IRA-93) and polyamine group functions (Diaion CR-20).

The values of the recovery factor [% R Pt(IV)] were determined for these anion -exchangers, as well as the sorption isotherms whose shape and type depended on the kind of aqueous phase employed and the phase contact time. In addition, the weight and volume distribution coefficients as well as the working and total ion-exchange capacities were calculated from the Pt(IV) breakthrough curves and various kinetic parameters were determined.

The anion-exchanger Amberlite IRA-93 exhibited a maximum working capacity for Pt(IV) ions.

Keywords: Aluminium, Aqueous Phase, Aqueous-Solution, Breakthrough, Capacity, Catalyst, Catalysts, Chloride, Copper, Functions, Ion Exchange, Ion-Exchange, Iron, Isotherms, Kinetic, Kinetic Parameters, Metals, Model, Ni, Nickel, Palladium, Pt(IV), Recovery, Reduction, Removal, Selective Removal, Separation, Sorption, Sorption Isotherms, Stability, Zinc, Zinc Chloride

? Saltati, K. and Sari, A. (2006), Sorption capacity and thermodynamic properties of natural Turkish (Reşadiye) bentonite for the removal of ammonium ions from aqueous solution. *Adsorption Science & Technology*, **24** (9), 749-760.

Full Text: [2006\Ads Sci Tec24, 749.pdf](2006/Ads%20Sci%20Tec24,%20749.pdf)

Abstract: Natural clays and materials such as bentonite, zeolite and sepiolite have been widely used for environmental and agricultural purposes because of their easy application and relative low cost. The aim of the present study was to investigate the sorption capacity of the natural Turkish (Reşadiye) bentonite (NTB) for the removal of ammonium (NH4+) ions front aqueous solution from the viewpoint of both the sorption isotherms and the associated thermodynamics. The influence of pH, adsorbent dosage and temperature on the sorption of NH4+ ions onto NTB was also studied.

It was found that the non-linear Langmuir model was more suitable for describing the sorption of NH4+ ions onto NTB since the application of this model exhibited a higher coefficient of determination (R-2 = 0.99) than that for the non-linear Freundlich model (R-2 = 0.98). The Dubinin-Radushkevich (D-R) model was also applied to the equilibrium data (R-2 = 0.99). The maximum sorption capacity towards NH4+ ions was determined via the Langmiur equation and found to be 30.12 mg/g. A comparison of the sorption capacity of NTB with those for various adsorbents revealed that this adsorbent had a high sorption capacity for the removal of NH4+ ions. The results obtained from an application of the D-R isotherm showed that the sorption of NH4+ ions onto NTB was a physical process.

Thermodynamic parameters such as the free energy change (ΔG°), enthalpy change (ΔH°) and entropy change (ΔS°) were also calculated to establish the thermodynamic adsorption behaviour of NHI ions onto NTB. These parameters indicated that the sorption of NH4+ ions by NTB was spontaneous, exothermic in nature and involved weak interactions between the NH4+ ions and negative charges on the NTB surface.

On the basis of these results, it was concluded that NTB has a significant potential for reducing the concentration of NH4+ ions in wastewater and agricultural residues by sorption without destroying the physical and ecological properties of the environment.

Keywords: Waste-Water, Clinoptilolite Zeolite, Nitrogen Removal, Metal-Ions, Fixed-Bed, Adsorption, Exchange, Isotherm, Systems, Pb(II)

? Filipkowska, U. (2006), Adsorption and desorption of reactive dyes onto chitin and chitosan flakes and beads. *Adsorption Science & Technology*, **24** (9), 781-795.

Full Text: 2006\Ads Sci Tec24, 781.pdf

Abstract: A study was undertaken to analyze the adsorption and desorption of four Reactive dyes, i.e. Reactive Yellow 84 (RY 84), Reactive Red 11 (RR 11), Reactive Black 5 (RB 5) and Reactive Black 8 (RB 8), onto chitin (sorbent 1) and chitosan in the form of flakes (sorbent 2) and beads (sorbent 3). The maximum adsorption capacity of sorbents 1, 2 and 3 and the quantity of desorbed dye were determined for the four dyes and the three types of sorbent examined. For all the Reactive dyes, the adsorption capacities of sorbents 2 and 3 were higher than that of sorbent 1, with the desorption efficiency being lower than the efficiency of the adsorption process. The highest efficiency of dye release, ca. 90%, was obtained for sorbent 1 and the chlorotriazine dyes.

Keywords: Adsorption, Adsorption and Desorption, Adsorption Capacity, Aqueous-Solutions, Capacity, Chitin, Chitosan, Desorption, Dye, Dyes, Equilibrium, Kinetics, Metal-Ions, Reactive Dyes, Removal, Sorption, Water

? Zeatoun, L. (2006), Equilibrium and kinetic modelling of phenol adsorption onto mixtures of tar sands and titania. *Adsorption Science & Technology*, **24** (10), 823-832.

Full Text: [2006\Ads Sci Tec24, 823.pdf](2006/Ads%20Sci%20Tec24,%20823.pdf)

Abstract: The isotherms and kinetics of adsorption of phenol onto mixtures of physically-activated tar sands and titania were studied at 298 K. Three kinetic models, i.e., pseudo-first order, pseudo-second order and intraparticle diffusion, were applied to fit the experimental data. The best fit was obtained with the pseudo- second-order model. The kinetic parameters were determined to allow the calculation of phenol uptake as function of time. The Langmuir and Freundlich isotherms were employed to determine the adsorption capacities for different initial pH values of the solution. The effects of the particle size of the adsorbent and the initial pH of the Solution on the removal of phenol were investigated.

Keywords: 298 K, 298-K, Activated Carbon, Adsorbent, Adsorption, Adsorption Capacities, Aqueous-Solutions, Chitosan, Diffusion, Dilute, Effects, Experimental, Experimental Data, Freundlich, Freundlich Isotherms, Function, Heavy-Metal Ions, Intraparticle Diffusion, Isotherms, Kinetic, Kinetic Modelling, Kinetic Models, Kinetic Parameters, Kinetics, Kinetics of Adsorption, Langmuir, Langmuir and Freundlich Isotherms, Mixtures, Model, Modelling, Models, Order, Parameters, Particle, Particle Size, pH, pH Values, Phenol, Phenol Adsorption, Pseudo Second Order, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Removal of Phenol, Second Order, Size, Sorption, Tar, Tar Sands, Time, Titania, Uptake

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Full Text: [2007\Ads Sci Tec25, 227.pdf](2007/Ads%20Sci%20Tec25,%20227.pdf)

Abstract: The metal ion-binding abilities of six lignocellulosic biomasses obtained from agro-industrial products and sustainable plantations, as well as of two red and one green marine algal species, were examined in a comparative manner to ascertain their potential as biosorbents of heavy metals from low concentration wastewater. Dilute single-solute solutions of cadmium and nickel ions (<= 1 mM) were used as models. All the biontaterials showed appreciable Cd(II) ion biosorption which was strongly dependent on the dosage used. The maximum Cd(II) ion biosorption capacities (X-mL), as estimated from the experimental isotherms using the Langmuir model, indicated that the red algae (X-mL= 0.26-0.52 mmol/g) and the lignocellulosic biomasses with larger lignin contents (X-mL= 0.17-0.20 mmol/g) possessed the greatest potential. This behaviour also applied to Ni(II) ion biosorption, although the bioniaterials proved to be less effective in this case, especially towards low dosage. Comparison of the Cd(II) ion equilibrium sorption by one of the lowest performing biomasses (sawdust from Arundo donax stems) with that for activated carbons developed from the same biomass under different atmospheres revealed that the biomass behaviour was similar to that of carbons activated by heating in inert or mildly oxidative atmospheres.

Keywords: Activated Carbons, Algae, Arundo-Donax, Atmospheres, Biomass, Biosorbents, Biosorption, Biosorption Capacities, Cadmium, Cd(II), Concentration, Copper(II) Ions, Dilute Aqueous-Solutions, Dosage, Effective, Equilibrium, Equilibrium Sorption, Experimental, Heavy Metals, Heavy-Metals, Ion, Ions, Isotherms, Langmuir, Langmuir Model, Lignin, Low, Marine, Marine Algae, Metal, Metal Ion Binding, Metals, Model, Models, Ni(II), Nickel, Nickel Ions, Phosphoric-Acid Activation, Plantations, Potential, Products, Red Algae, Sawdust, Solutions, Sorption, Species, Sphagnum Moss, Sugar-Cane, Sustainable, Toxic Metals, Treatment, Tree Fern, Turbinaria-Ornata, Wastewater, Wastewater Treatment

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Full Text: [2007\Ads Sci Tec25, 311.pdf](2007/Ads%20Sci%20Tec25,%20311.pdf)

Abstract: This study was carried out to examine the potential of Agave americana fibres (AAF) for the treatment of wastewater contaminated with dyes. The batch mode adsorption of two dyes, viz. Sumfixe Supra Red (SSR) and Alpacelle Lumiere Brown (ALB), by AAF was investigated at different pH values, temperatures and initial dye concentrations. The highest dye adsorption capacities at 30°C were attained at pH 2.0 for SSR and at pH 2.5 for ALB. In both cases, an increase in temperature increased the velocity of the reaction. The maximum amounts of dyes desorbed were at basic pH values. To compare our results with studies on other biomaterials, the adsorption isotherms and kinetic data were analysed employing the usual models (Freundlich, Langmuir and Temkin isotherms and first- and second-order kinetics). Conventional analysis indicated that the kinetics of the processes were closer to pseudo-second order rather than first order. The data were also modelled with a new method of analysis based on the statistical theory of complex systems and the heterogeneity of the sorption energy (energy landscape). This enabled the adsorption process to be characterised in terms of a greater number of physical parameters.

Keywords: Adsorption, Adsorption Isotherms, Analysis, Aqueous-Solutions, Biosorption, Dye, Isotherms, Kinetic, Kinetics, Langmuir, Levy, Modelling, Orange Peel, pH, Pseudo-Second Order, Removal, Sorption, Systems, Temperature, Theory, Wastewater, Water

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Full Text: [2007\Ads Sci Tec25, 637.pdf](2007/Ads%20Sci%20Tec25,%20637.pdf)

Abstract: The purpose of this study was to investigate the adsorption of two Basic dyes, i.e. Basic Blue 3 (BB3) and Basic Orange 2 (BO2), onto Sphagnum Magellanicum peat. The equilibrium studies were carried out at 30°C and 45°C, respectively. The equilibrium experimental results were fitted to the Langmuir model to obtain the characteristic parameters. The maximum sorption capacities for each dye were 41 mg/g for BB3 and 92 mg/g for BO2. The magnitude of the at. parameter increased with temperature for both dyes. The batch kinetic studies of Basic dye adsorption onto peat considered the effect of the initial concentrations of the dyes and the peat dosage. The models fitted were first order (Lagergren equation), pseudo-second order (chemisorption mechanism) and intra-particle diffusion. For all the systems studied, the pseudo-second-order model provided the best correlation. The intra-particle diffusion model provided good correlations over the intermediate and final steps of the adsorption process.

Keywords: Adsorbents, Adsorption, Aqueous-Solution, Basic Blue 3, Basic Dye, Basic Dyes, Chemisorption, Correlations, Diffusion, Diffusion Model, Dye, Dye Adsorption, Dyes, Effluent, Equilibrium, Equilibrium Studies, Experimental, First, First Order, Intra-Particle Diffusion, Intraparticle Diffusion, Intraparticle Diffusion Model, Kinetic, Kinetic Studies, Kinetics, Lagergren Equation, Langmuir, Langmuir Model, Mechanism, Methylene-Blue, Model, Models, Peat, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Removal, Sorption, Technologies, Temperature, Waste-Water Treatment

? de Britto, J.S., da Costa, A.C.A., Luna, A.S. and Henriques, C.A. (2007), Comparative study of ion-exchange and biosorption processes for the removal of Cd2+ and Zn2+ ions from aqueous effluents. *Adsorption Science & Technology*, **25** (9), 661-671.

Full Text: [2007\Ads Sci Tec25, 661.pdf](2007/Ads%20Sci%20Tec25,%20661.pdf)

Abstract: A basic investigation of the removal of Cd(II) and Zn(II) ions from aqueous solutions by Sargassum sp. and NaY zeolite was conducted at room temperature under batch conditions. The results obtained indicated that, for both sorbents, cadmium and zinc ion uptake could be described by the Langmuir adsorption model. The kinetics of the biosorption process followed a pseudosecond-order model, whereas equilibrium in the ion-exchange process was attained so rapidly that the data obtained could not be modelled. The maximum uptake capacities of the sorbents studied were 120 mg/g biomass and 108 mg/g zeolite for cadmium ions and 45.5 mg/g biomass and 70 mg/g zeolite for zinc ions, respectively. This can be considered an excellent result compared with conventional adsorbent materials. Thus Sargassum sp. and NaY zeolite have a great potential for removing cadmium and zinc ions, especially when the concentrations of these ions are low as in wastewater stream samples.

Keywords: Natural Zeolites, Heavy-Metals, Saccharomyces-Cerevisiae, Cadmium Biosorption, Waste-Waters, Adsorption, Equilibrium, Biomass, Clinoptilolite, Purification

? Fungaro, D.A. and Graciano, J.E.A. (2007), Adsorption of zinc ions from water using zeolite/iron oxide composites. *Adsorption Science & Technology*, **25** (10), 729-740.

Full Text: 2007\Ads Sci Tec25, 729.pdf

Abstract: The adsorption characteristics of zeolites synthesized from fly ash were combined in a composite with the magnetic properties of iron oxides to produce adsorbents which were magnetic materials. Such zeolite/iron oxide magnetic composites were prepared with weight ratios of 3:1, 2:1 and 1:1. The experimental data for the equilibrium adsorption isotherms of Zn2+ ions onto the composites were modelled using the Freundlich and Langmuir equations. The presence of iron oxide had no significant effect on the adsorption capacities of the magnetic composites. The experimental data were also employed to determine the kinetic characteristics of the adsorption process. The adsorption of Zn2+ ions was found to follow pseudo-second-order type kinetics. Although intra-particle diffusion occurred in the adsorption processes, it could not be accepted as the primary rate-determining step. The evaluated thermodynamic parameters indicated that the adsorption of Zn2+ ions onto zeolite/iron composites was spontaneous and endothermic.

Keywords: Adsorbent, Adsorbents, Adsorption, Adsorption Capacities, Adsorption Isotherms, Aqueous-Solution, Characteristics, Coal Fly-Ash, Composite, Composites, Contaminants, Data, Diffusion, Dyes, Endothermic, Equilibrium, Experimental, Fly Ash, Freundlich, Intra-Particle Diffusion, Intraparticle Diffusion, Iron, Iron Oxide, Iron Oxides, Isotherms, Kinetic, Kinetics, Langmuir, Magnetic, Magnetic Composites, Magnetic Properties, Oxide, Oxides, Primary, Pseudo Second Order, Pseudo-Second-Order, Sorption, Sphagnum Moss Peat, Thermodynamic, Thermodynamic Parameters, Water, Zeolites, Zinc, Zn2+

? Ostroski, I.C., Barros, M.A.S.D., Silva, E.A., Dantas, J.H., Arroyo, P.A. and Lima, O.C.M. (2007), The removal of Fe(III) ions by adsorption onto zeolite columns. *Adsorption Science & Technology*, **25** (10), 757-768.

Full Text: 2007\Ads Sci Tec25, 757.pdf

Abstract: The uptake capacity of Fe(III) ions by NaY zeolite was investigated in this work. Column experiments were undertaken on continuous systems at 30°C, pH = 3.5, employing a flow rate of 2 ml/min and an average particle size of 0.180 mm. The dynamic system exhibited a distinct ion-exchange mechanism which generated a favourable isotherm with an Fe(III) ion uptake of 2.16 mequiv/g. A mathematical model was also applied to represent the dynamics of the sorption process. The dynamic isotherm was successfully modelled by the Langmuir equation while the mathematical model gave a good description of the experimental dynamic data for feed concentrations ranging from 0.2 mequiv/l to 3.5 mequiv/l. The ion-exchange kinetics for Fe(III) ions were studied using the first-, second-order and Langmuir kinetic models.

Keywords: Adsorption, Aqueous-Solution, Binary, Biosorption, Capacity, Data, Dynamic, Dynamics, Equilibria, Exchange, Experimental, Experiments, Feed, First, Fixed-Bed Column, Flow, Ion Exchange, Ion-Exchange, Ionexchange, Iron, Isotherm, Kinetic, Kinetic Models, Kinetics, Langmuir, Langmuir Equation, Mathematical Model, Mechanism, Model, Models, Particle Size, pH, Removal, Second Order, Second-Order, Size, Sorption, Sorption Process, Systems, Uptake, Work, Y Zeolite, Zeolite

? Bilgiç, C. (2008), Investigation of the factors affecting the removal of an acid dye from aqueous solution by adsorption using bentonite and sepiolite. *Adsorption Science & Technology*, **26** (5), 363-372.

Full Text: [2008\Ads Sci Tec26, 363.pdf](2008/Ads%20Sci%20Tec26,%20363.pdf)

Abstract: The effects of some factors on the adsorption of an Acid dye (Acid Blue 193, AB 193) from aqueous solution onto bentonite and sepiolite samples were studied. These factors were saturation of the samples with cations (Na+ and Ca2+), the pH and the ionic strength of the dye solution. The Langmuir and Freundlich adsorption models were used to describe the equilibrium isotherm and determine the isotherm constants for each of the samples. The Langmuir model agreed very well with the experimental data. Cation saturation led to an increase in the adsorption capacities of the samples. In addition, the adsorption capacities decreased with increasing pH of the dye solution and increased with increasing ionic strength. The maximum adsorption capacity of both the bentonite and sepiolite samples towards the cationic dye Methylene Blue (MB) was higher than that towards the anionic dye AB 193.

Keywords: Activated Clay, Adsorption, Azo, Basic-Dyes, Behavior, Desorption, Green, Ions, Reactive Dyes, Silica, Sorption

? Unuabonah, E.I., Olu-Owolabi, B.I., Adebowale, K.O. and Yang, L.Z. (2008), Removal of lead and cadmium ions from aqueous solution by polyvinyl alcohol-modified kaolinite clay: A novel nano-clay adsorbent. *Adsorption Science & Technology*, **26** (6), 383-405.

Full Text: [2008\Ads Sci Tec26, 383.pdf](2008/Ads%20Sci%20Tec26,%20383.pdf)

Abstract: Kaolinite clay was modified with polyvinyl alcohol (PVA) to obtain a PVA-nano-clay adsorbent. X-Ray diffraction Measurements of the adsorbent showed no observable change in the d-spacing of its crystal lattice. Scanning electron microscopy of the PVA-modified nano-clay adsorbent indicated the presence of irregular crystal structures. Infrared spectroscopy suggested that the PVA-nano-clay adsorbent basically possessed Outer -OH functional groups. This adsorbent was found to have an adsorption capacity of 56.18 mg/g for Pb2+ ions and 41.67 mg/g for Cd2+ ions. The adsorption data obtained was well explained by the Diffuse Layer Model (DLM), which implies that the adsorption of both metal ions onto the modified adsorbent was via an inner-sphere surface complexation mechanism. The Delta H-0 values for adsorption of both metal ions onto the PVA-nano-clay were -12.48 kJ/mol for Pb2+ ions and -13.49 kJ/mol for Cd2+ ions, with both ions exhibiting negative adsorption entropies. data-fitting indicated that both the PVA-nano-clay and the unmodified adsorbent possessed homogeneous and heterogeneous adsorption sites. Virtually complete desorption (ca. 99%) of both metal ions occurred front PVA-nano-clay within 3 min.

Keywords: Adsorption, Adsorption Behavior, Aluminum, Bentonite, Calcium, Exchange, Ordered Kaolinite, Sorption, Surface, Thermodynamics, Transition

? Makhlouf, C., Baouab, M.H.V. and Roudesli, S. (2008), Use of the [Copper(II)/MAA-nylon] complex for the adsorption of residual acid dyes. *Adsorption Science & Technology*, **26** (6), 433-447.

Full Text: [2008\Ads Sci Tec26, 433.pdf](2008/Ads%20Sci%20Tec26,%20433.pdf)

Abstract: Nylon fibres were converted into a strong ion-exchange polymer by grafting with methacrylic acid (MAA). The modified nylon fibres were monitored for their ability to remove copper(II) ions and dyes from aqueous solutions. Evidence for the grafting of MAA onto nylon was provided by weight uptake experiments and atomic force microscopy (AFM). The exchange capacity of MAA-nylon was evaluated by potentiometric titration of the grafted acidic groups. Due to complexation, the acidic grafted groups immobilize Cu(II) ions from Clark-Lub’s buffered solution at a pH value of 8. The formation of a 1:1 complex was demonstrated by the values of the adsorption limits. The binary [Cu(II)/MAA nylon] system was then tested for the adsorption of two Acid dyes, i.e. Acid Blue 2-5 (AB 25) and Calmagite (Calma), as ligands in the metal-coordinating process. The adsorption of Cu(II) onto MAA-nylon and of the dyes onto Cu(II)/MAA-nylon was followed spectrometrically. The observed stoichiometries of the ternary [dye/Cu(II)/MAA-nylon] complex formed were [4/5:1:1] for AB 25 and [3/4:1:1] for Calrna at 20°C. Theoretical modelling of the adsorption process was performed employing the Langmuir, Freundlich and Jossen equations. Thermodynamic parameters such as the free energy change (ΔG°), the enthalpy change (ΔH°) and the entropy change (ΔS°) for adsorption were also investigated. The adsorption process is exothermic, which leads to a reduction in the extent of dye adsorption with increasing temperature.

Keywords: Activated Carbon, Adsorbent, Adsorption, Amidoximated Cellulose, Aqueous-Solutions, Color Removal, Fly-Ash, Immobilization, Ion-Exchanger, Waste-Water, Wastewaters

? Hashem, A., Ahmad, F. and Fahad, R. (2008), Application of some starch hydrogels for the removal of mercury(II) ions from aqueous solutions. *Adsorption Science & Technology*, **26** (8), 563-579.

Full Text: [2008\Ads Sci Tec26, 563.pdf](2008/Ads%20Sci%20Tec26,%20563.pdf)

Abstract: Three types of starch hydrogels were prepared via the graft polymerization of acrylonitrile, AN, onto maize starch using ceric ammonium nitrate, CAN, as the initiator, followed by saponification with sodium hydroxide. The prepared hydrogel samples were characterized by estimating their nitrogen and carboxy group contents, and by the application of FT-IR spectroscopy, thermogravimetric analysis (TGA) and scanning electron microscopy (SEM); in addition, their water retention values, WRVs, were also determined. The feasibility of using these hydrogels to remove Hg(II) ions from aqueous Solutions was examined. Factors affecting the adsorption of Hg(II) ions onto the starch hydrogels were studied, including the pH value of the solution, the contact time and the concentrations of the adsorbent and adsorbate. The present Study has shown that the prepared hydrogels could be used effectively for the adsorption of Hg(II) ions from aqueous solutions. The adsorption data obtained obeyed the Langmuir and Freundlich isotherms. The adsorption of Hg(II) ions onto the starch hydrogels followed second-order kinetics. An examination was made of the mechanism for the adsorption of Hg(II) ions onto the starch hydrogels.

Keywords: Adsorbent, Adsorption, Kinetics, Mercury(II), Sawdust, Sunflower Stalks, Water

? Won, S.W., Vijayaraghavan, K., Mao, J. and Yun, Y.S. (2008), An aminated bacterial biosorbent capable of effectively binding negatively charged pollutants in aqueous solution. *Adsorption Science & Technology*, **26** (8), 589-598.

Full Text: [2008\Ads Sci Tec26, 589.pdf](2008/Ads%20Sci%20Tec26,%20589.pdf)

Abstract: The main aim of this work was to enhance the biosorption capacity of Corynebacterium glutamicum for the remediation of wastewaters containing Reactive dyes. Amine groups were found to be responsible for accommodating negatively charged Reactive Red 4 (RR4) molecules via electrostatic interaction. Thus, increasing the number of amine groups oil C. glutamicum, via amination, resulted in an enhanced RR4 biosorption capacity. The pH-edge experiments revealed that acidic conditions (pH=2) favoured the biosorption of RR4 molecules. Isotherm experiments indicated that the aminated C. glutamicum exhibited the highest RR4 uptake, i.e. 133.8 mg/g at pH 2, compared to 96.8 mg/g for raw C. glutamicum. of the two isotherm models considered, the Toth model provided a better description of the experimental isotherms, with high correlation coefficients and low percentage error values. Kinetic experiments revealed the importance of the initial dye concentration, with equilibrium being rapidly attained after ca. I h for all the concentrations examined. The non-linear form of the pseudo-second-order model described the biosorption kinetic data, with high correlation coefficients and low percentage error values compared to the pseudo-first-order model. Desorption was successful achieved at pH 10, with > 90.2% elution efficiencies for both the raw and aminated biomasses.

Keywords: Biosorption, Cell-Walls, Corynebacterium-Glutamicum, Decolorization, Enhancement, Equilibrium, Lead, Metal-Binding, Sorption, Waste Biomass

? Shi, T.H., Jia, S.G., Chen, Y., Wen, Y.H., Du, C.M., Wang, Z.C. and Qiu, R.L. (2008), Adsorption characteristics of Cu(II) and Pb(II) ions onto natural manganese ore from aqueous solution. *Adsorption Science & Technology*, **26** (8), 613-629.

Full Text: [2008\Ads Sci Tec26, 613.pdf](2008/Ads%20Sci%20Tec26,%20613.pdf)

Abstract: The adsorption of heavy metal cations, i.e. Pb(II) and Cu(II), from aqueous Solution by a natural manganese mineral (rhodochrosite) was investigated. The properties of the ore were studied using SEM, 1717 1 R, XRD and BET methods. The value of pH(pzc) was determined using an equilibrium technique to give a Value of 7.8±0.1 which was not affected by the presence of added electrolyte. Batch experiments were carried out to investigate the adsorption processes. Kinetic experiments indicated that the processes could be simulated by a pseudo-second-order model and the Elovich equation, suggesting that the process may be chemisorption in nature. The adsorption capacity increased with increasing initial concentration of metal cations. The resulting isotherms Could be described by the Langmuir relationship, With the adsorbent showing a higher affinity towards Pb(II) ions than Cu(II) ions. Thermodynamic analysis indicated that the adsorption process was endothermic and possibly chemical in nature with positive values of ΔH°. Positive ΔS° values suggested that a dissociative process was involved. The small positive ΔG° values indicated that the adsorption processes required a small amount of energy. The adsorption processes were only slightly influenced by the concentration of added electrolyte but were strongly dependent on the pH value. It is proposed that the most possible mechanism for the adsorption processes involves inner-sphere complexation.

Keywords: Adsorption, Calcite-Water Interface, Crystal-Growth, Desorption Reversibility, Heavy-Metal, Kinetic-Models, Ray-Absorption Spectroscopy, Removal, Sawdust Adsorption, Sorption, Waste-Water

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Full Text: [2008\Ads Sci Tec26, 651.pdf](2008/Ads%20Sci%20Tec26,%20651.pdf)

Abstract: In this work, the film-pore diffusion model was applied to the adsorption of phenol onto peanut shell activated carbon in a batch stirred vessel. This two-resistance model was applied to predict the phenol concentration decay curves for different initial phenol concentrations, carbon particle sizes and dosages. The predicted concentration decay curves were compared with the experimental findings. The optimum best-fit values of the external mass-transfer coefficient and effective diffusion coefficients were found by minimizing the difference between the experimental and model-predicted phenol solution concentration. It was found that, under the experimental conditions employed in this study, the influence of the external mass-transfer resistance was low. A single value of the mass transport coefficient, k(sic) of (4.8±1.3)🞨10-3 (cm/s) described the whole range of system conditions. The difference between the corresponding values of the effective diffusivity, D, was not statistically significant. Consequently, a constant value of the effective pore diffusivity of (4.1±0.4)🞨10-6 (cm2/s) was sufficient to provide an accurate correlation of the decay concentration curve.

Keywords: Adsorption, Contact Time Optimization, Metal-Ions, Sorption, Systems

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Full Text: [2008\Ads Sci Tec26, 661.pdf](2008/Ads%20Sci%20Tec26,%20661.pdf)

Abstract: Alhagi cellulose tartrate (ACT) with a high carboxyl group content was prepared by treatment of Alhagi residues (AR) with tartaric acid (TA) at high temperature. Factors influencing the reaction were investigated, viz. tartaric acid concentration, dehydration temperature, particle size and dehydration time. The prepared Altagi cellulose tartrate samples were characterized using FT-IR spectroscopy and by estimation of the carboxyl group content. The esterified samples were utilized for the adsorptive removal of Zn(II) ions from aqueous solution with all the factors influencing the process being studied. These factors were the pH value of the adsorbate solution, the adsorbent concentration, agitation time and temperature. The Langmuir and Freundlich models were applied to the data obtained from the adsorption studies. It was demonstrated that the Alhagi cellulose tartrate samples could be used effectively for the adsorption of Zn(II) ions from aqueous solutions. The thermodynamics constants of the adsorption process, viz. ΔH°, ΔS° and ΔG°, were evaluated. The results showed that the adsorption of Zn(II) ions onto ACT was exothermic and spontaneous. The adsorption data followed second-order kinetics, with the equilibrium data being only satisfactorily described by the Langmuir isotherm.

Keywords: Adsorbent, Adsorption, Cu(II), Pulp, Sunflower Stalks, Waste-Water

? Sathishkumar, M., Choi, J.G., Ku, C.S., Vijayaraghavan, K., Binupriya, A.R. and Yun, S.E. (2008), Carbaryl sorption by porogen-treated banana pith carbon. *Adsorption Science & Technology*, **26** (9), 679-686.

Full Text: [2008\Ads Sci Tec26, 679.pdf](2008/Ads%20Sci%20Tec26,%20679.pdf)

Abstract: This paper reports the adsorption ability of banana pith activated carbon, with ZnCl2, as the porogen, towards carbaryl (1-naphthyl-N-methylcarbamate) from aqueous solution. The pH-edge experiments revealed that carbaryl adsorption onto ZnCl2-treated banana pith activated carbon (ZTC) was a pH-dependent process with maximum adsorption occurring at pH 11. The adsorption isotherm obtained at pH 11 revealed that ZTC possessed a maximum adsorption capacity of 45.9 mg/g. The adsorption isotherms were well described by the Langmuir and Freundlich models. The kinetic data obtained at different initial carbaryl concentrations were modelled using pseudo-first- and -second-order models. Acetone successfully desorbed carbaryl with a 99.8% elution efficiency.

Keywords: Activated Carbon, Adsorption, Aqueous-Solutions, Biomass, Dye, Pesticide, Removal, Waste-Water

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Full Text: [2008\Ads Sci Tec26, 853.pdf](2008/Ads%20Sci%20Tec26,%20853.pdf)

Abstract: The adsorption of Methylene Blue, a Basic dye, onto the non-living biomass of marine algae and freshwater macrophyte was investigated by batch experiments. Such adsorption onto both adsorbents was pH-independent. The experimental data were analyzed using pseudo-first-order and pseudo-second-order kinetic equations, the results Suggesting that the data were described well by both models. Intraparticle diffusion played an important role in the mass-transfer process. Methylene Blue adsorption onto both adsorbents at 20°C was also evaluated by the Freundich and Langmuir isotherms. The maximum adsorption capacities were 155.31 mg/g for Laminaria japonica (LJ) biomass and 150.39 mg/g for alligator weed (AW) biomass, respectively. The effects of adsorbent concentration and ionic strength oil Methylene Blue adsorption were also investigated. The adsorbents investigated could serve as low-cost adsorbents for removing Methylene Blue from aqueous solution.

Keywords: Activated Carbons, Adsorbent, Adsorbents, Adsorption, Adsorption Capacities, Algae, Aqueous Solution, Basic Dye, Basic-Dyes, Batch, Batch Experiments, Biomass, Concentration, Data, Diffusion, Dye, Dye Removal, Experimental, Experiments, Freshwater, Heavy-Metal, Intraparticle Diffusion, Ionic Strength, Isotherms, Kinetic, Kinetic Equations, Kinetics, Langmuir, Langmuir Isotherms, Liquid-Phase Adsorption, Low Cost, Low Cost Adsorbents, Low-Cost Adsorbents, Marine Algae, Mass Transfer, Methylene Blue, Models, Non-Living, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Removal, Rice-Husk, Role, Solid-Waste, Solution, Sorption, Strength, Weed

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Full Text: [2009\Ads Sci Tec27, 47.pdf](2009/Ads%20Sci%20Tec27,%2047.pdf)

Abstract: Naturally occurring kaolinite and its acid-activated form were used to separate the toxic metal ions Cd(II), Co(II), Cu(II), Pb(II) and Ni(II) from water by adsorption. Kaolinite was treated with 0.25 M H2SO4 to obtain the acid-activated form. Adsorption onto the calcined forms of the clays was influenced by pH, the solution concentration of metal ions, the amount of adsorbent employed, the interaction time and the temperature. The process followed second-order kinetics very closely. Isotherm-fitting procedures showed compliance with the Langmuir and Freundlich equations suggesting the involvement of strong interactions. The Langmuir monolayer capacity showed some increase between kaolinite and the acid-activated form [Cd(II): 9.9 and 11.4 mg, g; Co(II): 11.2 and 12.1 mg, g; Cu(II): 9.2 and 10.1 mg, g; Pb(II): 11.1 and 12.1 mg, g; and Ni(II): 10.4 and 11.9 mg, g]. The thermodynamics of the rate processes showed that the adsorption of Co(II), Cd(II) and Cu(II) ions was endothermic and accompanied by an increase in both the entropy and the Gibbs’ free energy. However, in contrast, the adsorption of Pb(II) and Ni(II) ions was exothermic with a decrease in entropy and an appreciable decrease in the Gibbs’ free energy. The results have established that kaolinite and its acid-activated form show a good potential as adsorbents for Cd(II), Co(II), Cu(II), Pb(II) and Ni(II) ions from aqueous media.

Keywords: Activation, Adsorbent, Adsorbents, Adsorption, Aqueous-Solutions, Bed Sediments, Cadmium Adsorption, Calcined, Capacity, Cd(II), Clays, Co(II), Compliance, Concentration, Cone Biomass, Cu(II), Cu(II) Ions, Endothermic, Energy, Entropy, Exothermic, Forms, Freundlich, Heavy-Metal Removal, Interaction, Ions, Kaolinite, Kinetics, Langmuir, Media, Metal, Metal Ions, Modified Montmorillonite, Monolayer, Natural Bentonite, Ni(II), Ni(II) Ions, Pb(II), pH, Pinus-Sylvestris, Potential, Procedures, Sawdust Adsorption, Second Order, Second Order Kinetics, Second-Order, Second-Order Kinetics, Solution, Temperature, Thermodynamics, Toxic, Waste-Waters, Water

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Full Text: [2009\Ads Sci Tec27, 85.pdf](2009/Ads%20Sci%20Tec27,%2085.pdf)

Abstract: The removal of Zn(II) ions from aqueous solution was studied using natural, thermally-activated and acid-activated kaolinite samples at different temperatures. The linear Langmuir, Freundlich and Dubinin-Radushkevich (D-R) adsorption equations were applied to describe the equilibrium isotherms. The Langmuir constants for natural kaolinite were found to be negative whereas, for the other samples, the isotherm models gave a good fit. In addition, the pseudo-first-order and pseudo-second-order models were used to determine the kinetic data. The experimental data were well fitted by the pseudo-second-order kinetic model. Thermodynamic parameters such as the enthalpy (Δ*H*°), Gibbs’ free energy (Δ*G*°) and entropy (Δ*S*°) were calculated for natural, thermally-activated and acid-activated kaolinite. These values showed that the adsorption of Zn(II) ions onto activated kaolinite was controlled by a physical mechanism and occurred spontaneously The process of adsorption was favoured at high temperatures, with the adsorption capacity of the acid-activated kaolinite being greater relative to that of natural and thermally-activated kaolinite at various temperatures.

Keywords: Adsorption, Adsorption Capacity, Aqueous Solution, Aqueous-Solutions, Bentonite, Capacity, Clay, Copper, Data, Energy, Enthalpy, Entropy, Equilibrium, Equilibrium Isotherms, Experimental, Freundlich, Heavy-Metals, Ions, Isotherm, Isotherms, Kaolinite, Kinetic, Kinetic Model, Langmuir, Lead, Mechanism, Model, Models, Montmorillonite, Natural, Physical, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Solution, Sorption, Surfactants, Thermodynamic, Thermodynamic Parameters, Zn(II), Zn(II) Ions

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Full Text: [2009\Ads Sci Tec27, 177.pdf](2009/Ads%20Sci%20Tec27,%20177.pdf)

Abstract: Manganese oxide-coated sand (MOCS) and manganese oxide-coated crushed brick (MOCB) were characterized and employed for the removal of Pb(II) ions from aqueous solution. Scanning electron microscopy (SEM), FT-IR, X-ray diffraction (XRD) methods and BET analyses were used to study the surface properties of the adsorbents. Adsorption of Pb(II) ions from aqueous solutions was investigated by batch experiments. The estimated optimum pH for Pb(II) ion retention by the considered adsorbents was 5. Both the Freundlich and Langmuir isotherms provided a reasonable fit to the experimental data for the adsorption of Pb(II) ions. The adsorption capacities of the coated adsorbents at a pH value of 5 and a temperature of 20ºC were 0.029 mmol/g and 0.030 mmol/g for MOCS and MOCB, respectively. The adsorption kinetics were tested using the pseudo-first-order and pseudo-second-order equations as well as the intraparticle diffusion model, with the rate constants from the three kinetic models being calculated. The best correlation coefficients were obtained using the pseudo-second-order kinetic model. Results from this study suggest that the manganese oxide-coated sorbent is potentially suitable for the removal of Pb(II) ions from aqueous solutions.

Keywords: Adsorbents, Adsorption, Adsorption Capacities, Adsorption Kinetics, Analyses, Aqueous Solution, Aqueous Solutions, Batch, Batch Experiments, BET, Cadmium, Characterization, Coated, Copper, Correlation, Crushed Brick, Data, Diffusion, Diffusion Model, Dioxide, Electron Microscopy, Experimental, Experiments, Freundlich, FT-IR, FTIR, Heavy-Metal, Intraparticle Diffusion, Intraparticle Diffusion Model, Ions, Iron, Isotherms, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Langmuir, Langmuir Isotherms, Lead(II), Manganese, Manganese Oxide Coated, Methods, Model, Models, Pb(II), Pb(II) Ions, pH, pH Value, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Rate Constants, Removal, Retention, Sand, SEM, Solution, Solutions, Sorbent, Sorption, Surface, Surface Properties, Temperature, Value, Water, X-Ray, X-Ray Diffraction, XRD

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Full Text: [2009\Ads Sci Tec27, 267.pdf](2009/Ads%20Sci%20Tec27,%20267.pdf)

Abstract: Phenol ranks as one of the most common hazardous pollutants present in water and industrial effluents. The object of the work describe herein was to assess the phenol adsorption capacity of fly ash under varying experimental conditions such as adsorbent dosage, pH, varying phenol concentration and contact time. The study showed that, at a phenol concentration of 100 mg/l, the percentage removal of phenol was 95.69% at an optimum dosage of 7 g/l fly ash. The effect of the initial phenol concentration indicated that the percentage phenol removal increased with increasing phenol concentration, being a maximum (98.08%) at a phenol concentration of 700 mg/l. Further increase in phenol concentration (1000 mg/l) resulted in a slight decrease in phenol removal. The adsorption of phenol also varied with the pH and was found to be a maximum at a pH value of 8. Adsorption equilibrium studies indicated that an equilibrium time of 2 h was necessary for the maximum removal of phenol. Isotherm studies showed that the adsorption of phenol onto fly ash was best described by the Langmuir isotherm relative to the Freundlich isotherm. Accordingly, the Langmuir adsorption coefficients, i.e. the maximum adsorption capacity (*q*0) and the Langmuir adsorption constant (*K*L) were evaluated and found to be 142.86 mg/g and 0.0199 l/g, respectively. Analysis of the kinetic data indicated that the kinetics of phenol adsorption closely follow the pseudo-second-order model.

Keywords: Activated Carbon, Adsorbent, Adsorbent Dosage, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Capacity, Concentration, Contact Time, Data, Effluents, Equilibrium, Equilibrium Studies, Experimental, Fly Ash, Freundlich, Freundlich Isotherm, Isotherm, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Model, pH, pH Value, Phenol, Phenol Removal, Pollutants, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Removal, Sorption, Value, Waste-Water, Water, Work

? Khalil, A.A., Sokker, H.H., Al-Anwar, A., bd El-Zaher, A. and Hashem, A. (2009), Preparation, characterization and utilization of amidoximated poly (AN/MAA)-grafted alhagi residues for the removal of Zn(II) ions from aqueous solution. *Adsorption Science & Technology*, **27** (4), 363-382.

Full Text: [2009\Ads Sci Tec27, 363.pdf](2009/Ads%20Sci%20Tec27,%20363.pdf)

Abstract: Radiation grafting by the mutual method of methacrylic acid/acrylonitrile (MAA/AN) onto Alhagi residues in the presence of dimethylformamide (DMF) as a solvent is discussed. The factors affecting the radiation graft copolymerization were investigated. These included radiation dose, co-monomer composition and concentration. The grafted samples were characterized using FT-IR spectroscopy and scanning electron microscopy (SEM), as well as by the estimation of their nitrogen and carboxyl group contents. The grafted samples were then amidoximated by treatment with hydroxylamine hydrochloride in an alkaline medium. Such amidoximated poly(MAA/AN)-grafted Alhagi residues were utilized for the removal of Zn(II) ions from aqueous solution by adsorption and the factors affecting such adsorption processes were studied. These factors were the pH of the adsorbate solution, the adsorbent dosage, the contact time and the adsorption temperature. The adsorption data obeyed the Langmuir and Freundlich isotherms. The Langmuir adsorption capacity (*q*max) of the amidoximated poly(MAA/AN)-grafted Alhagi residues towards Zn(II) ions was found to be 212.76 and 344.8 mg/g at 30°C and 50°C, respectively. Similarly, the Freundlich constants, K-F and l/n, at 30°C were found to be 21.47 and 0.3489, respectively. The study showed that amidoximated poly(MAA/AN)-grafted Alhagi residues were effective in the adsorption of Zn(II) ions from aqueous Solutions. The thermodynamics parameters of the adsorption process, viz. ΔH°, ΔG° and ΔS°, were evaluated. The results showed that the adsorption of Zn(II) ions onto amidoximated poly(MAA/AN)-grafted Alhagi residues was endothermic and spontaneous. The adsorption data followed second-order kinetics.

Keywords: Adsorbent, Adsorbent Dosage, Adsorption, Adsorption Capacity, Aqueous Solution, Capacity, Characterization, Composition, Concentration, Copolymerization, Cost, Data, Dye, Electron Microscopy, Endothermic, Equilibrium, Freundlich, FT-IR, FTIR, FTIR Spectroscopy, Graft, Graft Copolymerization, Grafted, Grafting, Ions, Isotherms, Kinetics, Langmuir, Langmuir And Freundlich Isotherms, Maize Starch, Natural Adsorbents, Nitrogen, pH, Radiation, Removal, Scanning Electron Microscopy, Second Order, Second Order Kinetics, Second-Order, Second-Order Kinetics, SEM, Solution, Spectroscopy, Temperature, Thermodynamics, Treatment, Waste-Water, Zn(II), Zn(II) Ions

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Full Text: [2009\Ads Sci Tec27, 383.pdf](2009/Ads%20Sci%20Tec27,%20383.pdf)

Abstract: The potential of a novel sorbent, magnesia-amended silica granules (MAS), for the removal of metal ions from aqueous solution has been examined. MAS, prepared by calcining magnesium chloride-impregnated silicon dioxide at 773 K, exhibited an adsorption capacity towards metal ions that was 15- to 30-times larger than that of silicon dioxide. Batch sorption studies were performed as a function of contact time and pH. X-Ray powder diffraction (XRD), infrared spectral analysis (FT-IR), porosity and surface area measurements were used to characterize the physicochemical properties of MAS. At an initial concentration of 50 mg/l, more than 90% removal of metal ions was achieved within 8 h contact time at a weak acid pH value. of the kinetic models tested, the pseudo-second-order model gave the best fit to the kinetic data, while the Langmuir isotherm model provided the best fit to the equilibrium adsorption data for metal ions onto MAS. The adsorption processes were endothermic.

Keywords: Adsorption, Adsorption Capacity, Analysis, Aqueous Solution, Aqueous-Solution, Boron Removal, Capacity, Chitosan Beads, Composite, Concentration, Copper, Data, Endothermic, Equilibrium, Fluoride Sorption, FT-IR, FTIR, Function, Ions, Isotherm, Isotherm Model, Kinetic, Kinetic Models, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Magnesium, Mas, Metal, Metal Ions, Model, Models, pH, pH Value, Porosity, Potential, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Removal, Sepiolite, Silica, Silicon, Solution, Sorbent, Sorption, Sorption Studies, Spectral Analysis, Spectroscopy, Surface, Surface Area, Value, Water, XRD

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Full Text: [2009\Ads Sci Tec27, 435.pdf](2009/Ads%20Sci%20Tec27,%20435.pdf)

Abstract: The adsorption of lead(II) ions from aqueous solution onto lignin was investigated in this study. Thus, the influence of the initial solution pH, the lignin dosage, the initial Pb(II) ion concentration and the contact time were investigated at room temperature (19±0.5ºC) in a batch system. Adsorption equilibrium was approached within 30 min. The adsorption kinetic data could be well described by the pseudo-second-order kinetic model, while the equilibrium data were well fitted using the Langmuir isotherm model. A maximum adsorption capacity of 32.36 mg/g was observed. The results of this study indicate that lignin has the potential to become an effective and economical adsorbent for the removal of Pb(II) ions from industrial wastewaters.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Adsorption Kinetic, Aqueous Solution, Batch, Batch System, Biosorption, Capacity, Concentration, Data, Equilibrium, Heavy-Metals, Ions, Isotherm, Isotherm Model, Kinetic, Kinetic Model, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Lead(II), Lignin, Mechanisms, Model, Nickel, Pb(II), Pb(II) Ions, pH, Potential, Processing Waste Sludge, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Room Temperature, Solution, Sorption, Sphagnum Moss Peat, Temperature, Wastewaters, Water

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Full Text: [2009\Ads Sci Tec27, 461.pdf](2009/Ads%20Sci%20Tec27,%20461.pdf)

Abstract: Adsorption is one of the techniques used for the effective removal of dyes from industrial effluents, but the adsorption efficiency depends on the choice of a suitable adsorbent. The aim of the present study was to investigate the use of Neem leaves as an alternative adsorbent for the removal of dyes present in textile effluents. The dyestuff studied was the reactive dye Remazol Blue RR. In order to obtain the best removal conditions, the influence of the following parameters was investigated: pH value of the aqueous solution, agitation, addition of sodium sulphate, temperature and adsorbent particle size. A good correlation was obtained when the Langmuir model was applied to fit the experimental data obtained for the concentration of solute adsorbed by the solid phase in terms of the equilibrium concentration of the fluid phase. The experimental data showed that 90% removal of Remazol Blue RR was achievable using Neem leaves as the adsorbent.

Keywords: Activated Carbon, Adsorbent, Adsorption, Agitation, Alternative, Aqueous Solution, Azadirachta Indica, Choice, Concentration, Correlation, Data, Dye, Dye Removal, Dyes, Dyestuff, Efficiency, Effluents, Equilibrium, Experimental, Kinetics, Langmuir, Langmuir Model, Methylene-Blue, Model, NEEM, Particle Size, pH, pH Value, Reactive Dye, Remazol Blue, Removal, Removal of Dyes, Size, Sodium, Solution, Sorption, Techniques, Temperature, Textile Effluents, Value

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Full Text: [2009\Ads Sci Tec27, 493.pdf](2009/Ads%20Sci%20Tec27,%20493.pdf)

Abstract: A comparison has been made of the efficiency of heavy metal ion adsorption from synthetic wastewaters by charcoal prepared locally from the burnt remnants of plantain peel with more conventional adsorbents such as industrial activated wood charcoal, technical charcoal animal powder and Amberlite resin. Thus, mixed standard solutions (100 mg/l) of copper and lead ions adjusted by buffer solutions to pH values of 5, 7 and 9, respectively, were allowed to flow through adsorbent columns which were 10, 20, 30, 40 and 50 cm in length. The concentrations of the heavy metal ions in the mixed standard solutions were determined before and after contact with the adsorbents via atomic absorption spectrophotometry (AAS). The adsorption capacities of the various adsorbents based on the overall percentage removal of Cu2+, ions ill pH 9 employing it column of 50 cm length were in the order: Amberlite resin (98.89±7.59%) > plantain peel charcoal (98.56±6.72%) > technical charcoal animal powder (96.87±5.78%) > activated wood charcoal (93.64±7.29%). The corresponding order for Ph2+ ions at a pH value of 7 employing a column of 50 cm length was: Amberlite resin (99.98 +/- 7.53%) > plantain peel charcoal (98.37±7.95%) > technical charcoal animal powder (97.91±6.83%) > activated wood charcoal (96.39±7.06%).

Keywords: Absorption, Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Capacities, Buffer, Charcoal, Chromium, Column, Comparison, Conventional, Copper, Cu2+, Efficiency, Flow, Heavy Metal, Heavy Metal Ions, Ions, Lead, Length, Metal, Metal Ion, Metal Ions, Nickel, Peat, pH, pH Value, Removal, Resin, Solutions, Spectrophotometry, Standard, Value, Waste-Water, Wastewaters, Wood

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Full Text: [2009\Ads Sci Tec27, 537.pdf](2009/Ads%20Sci%20Tec27,%20537.pdf)

Abstract: Batch adsorption experiments were carried out using marine brown Laminaria japonica algae for the removal of the Basic dye Malachite Green from aqueous solution. The influence of process parameters such as the initial solution pH, the contact time, the adsorbent concentration, the particle size, the interaction temperature and the ionic strength were investigated. The adsorbent was characterized by FT-IR spectroscopy. The adsorption of Malachite Green was pH-dependent and attained equilibrium within 60 min for two particle size fractions. The kinetic data were tested using the pseudo-first-order equation and the second-order Ritchie equation. The results showed that the adsorption of Malachite Green onto Laminaria japonica followed the second-order Ritchie equation very well. The Langmuir and Freundlich equations were applied to the data relating to the adsorption isotherms and the observed maximum adsorption capacity (*q*max) for the particle size fraction < 150 mu m was 89.44 mg/g at 20ºC. The effects of adsorbent concentration and ionic strength on the adsorption of Malachite Green were very marked. The *Laminaria japonica* algae could serve as low-cost adsorbents for removing Malachite Green dye from aqueous solution.

Keywords: Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Isotherms, Algae, Aqueous Solution, Basic Dye, Batch Adsorption, Biosorption, Capacity, Color Removal, Concentration, Data, Dye, Equilibrium, Evaluation, Experiments, Freundlich, FT-IR, FTIR, FTIR Spectroscopy, Interaction, Ionic Strength, Isotherms, Kinetic, Langmuir, Low Cost, Low Cost Adsorbents, Low-Cost Adsorbents, Malachite Green, Methylene-Blue, Particle Size, pH, pH-Dependent, Pseudo First Order, Pseudo-First-Order, Pseudo-First-Order Equation, Racemosa Var. Cylindracea, Removal, Rice-Husk, Sawdust, Second Order, Second-Order, Size, Solution, Spectroscopy, Strength, Temperature, Time, Waste-Water

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Full Text: [2009\Ads Sci Tec27, 567.pdf](2009/Ads%20Sci%20Tec27,%20567.pdf)

Abstract: A newly-synthesized poly-o-toluidine Th(IV) phosphate nanocomposite cation-exchanger was employed as an adsorbent to study the adsorption thermodynamics and kinetics of Mancozeb from aqueous media. Some parameters such as the Freundlich constants, the thermodynamic equilibrium constant (K-0), the standard free energy change (ΔG°), the standard enthalpy change (ΔH°) and the standard entropy change (50) were determined. Thermodynamic analysis revealed that the adsorption of Mancozeb onto poly-o-toluidine Th(IV) phosphate was exothermic, spontaneous and decreased as the temperature was increased from 25 C to 45°C. A pesticide-sensitive membrane electrode was fabricated using poly-o-toluidine Th(IV) phosphate as an electro-active composite material. Its sensitivity towards Mancozeb was monitored.

Keywords: Adsorbent, Adsorption, Adsorption Thermodynamics, Analysis, Aqueous-Solutions, Arsenosilicate, Carbofuran, Cation Exchanger, Composite, Energy, Enthalpy, Entropy, Equilibrium, Exothermic, Freundlich, Kinetics, Media, Membrane, Nanocomposite, Phosphate, Polyaniline Sn(IV) Phosphate, Sensitivity, Soils, Standard, Temperature, Th(IV), Thermodynamic, Thermodynamic Analysis, Thermodynamics

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Full Text: [2009\Ads Sci Tec27, 603.pdf](2009/Ads%20Sci%20Tec27,%20603.pdf)

Abstract: The ability of an iron oxide/fly ash composite adsorbent prepared with municipal solid waste fly ash and iron nitrate to remove phosphate ions from aqueous solutions has been tested. The characteristics and physicochemical performances of the composite were investigated via nitrogen adsorption and scanning electron microscopy (SEM) studies. The comparative adsorption of phosphate ions by the composite adsorbent and fly ash was investigated using batch experiments. It was found that the adsorption properties of the composite adsorbent towards phosphate ions depended on the pH value of the solution and the anion concentration in the same. The equilibrium data were analyzed using the Langmuir and Freundlich isotherms, from which it was shown that the adsorption capacities for phosphate ions at pH 3.0 were 27.39 mg/g for iron oxide/fly ash and 18.90 mg/g for fly ash. The results showed the adsorption patterns for phosphate ions with fly ash and iron oxide/fly ash composite adsorbent showed a better match to the Freundlich model rather than the Langmuir model. The adsorption kinetic data could be well described by the Lagergren pseudo-second-order kinetic equation. The effect of temperature on the adsorption phenomena was investigated, the results indicating that phosphate ion removal by iron oxide/fly ash composite adsorbent was endothermic in nature.

Keywords: Adsorbent, Adsorption, Adsorption Capacities, Adsorption Kinetic, Adsorption Properties, Aqueous Solutions, Batch, Batch Experiments, Characteristics, Comparative Adsorption, Composite, Concentration, Copper(II), Data, Drinking-Water, Electron Microscopy, Endothermic, Engineered Sorbents, Equilibrium, Experiments, Fly Ash, Freundlich, Freundlich Model, Ions, Iron, Isotherms, Kinetic, Kinetic Equation, Langmuir, Langmuir and Freundlich Isotherms, Langmuir Model, Lead(II), Model, Municipal Solid Waste, Nitrate, Nitrogen, pH, pH Value, Phosphate, Phosphate Ion, Phosphorus Removal, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Equation, Removal, Scanning Electron Microscopy, SEM, Solid Waste, Solution, Solutions, Temperature, Value, Waste, Waste-Water

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Full Text: [2009\Ads Sci Tec27, 685.pdf](2009/Ads%20Sci%20Tec27,%20685.pdf)

Abstract: The adsorption of di-n-butyl phthalate (DBP) from aqueous solution was studied in a batch adsorption system. Activated carbons from coals, coconut shell and nutshell were evaluated to determine the most effective adsorbent. Kinetic and equilibrium studies were investigated at various initial DBP concentration (3-6 mg/l), adsorbent dosage (40-140 mg/l), suspension pH (3-9) and temperature (25-55ºC). Equilibrium adsorption isotherms were analyzed using the Langmuir, Freundlich and Temkin models. The experimental isotherms were S-type, with the Freundlich isotherm giving a good description of the data obtained at lower DBP concentration. The pseudo-first-order, pseudo-second-order and intra-particle diffusion models were used to fit the kinetic adsorption data. It was found that the adsorption of DBP followed pseudo-first-order kinetics, with the adsorption rate being controlled by both film and pore diffusion. The enthalpy, entropy and Gibbs’ free energy constants were calculated. It was found that the adsorption was spontaneous and endothermic, with favourable adsorption capacities being observed at higher temperatures.

Keywords: Activated Carbons, Adsorbent, Adsorbent Dosage, Adsorption, Adsorption Capacities, Adsorption Isotherms, Adsorption Rate, Aqueous Solution, Aqueous-Solution, Batch, Batch Adsorption, Carbon, Coconut Shell, Concentration, Data, Degradation, Dibutyl Phthalate, Diethyl Phthalate, Diffusion, Dimethyl Phthalate, Endothermic, Energy, Enthalpy, Entropy, Equilibrium, Equilibrium Adsorption, Equilibrium Studies, Experimental, Fly-Ash, Freundlich, Freundlich Isotherm, Intra-Particle Diffusion, Intraparticle Diffusion, Isotherm, Isotherms, Kinetic, Kinetic Adsorption, Kinetics, Langmuir, Mineralization, Models, pH, Phase, Phthalate, Pore Diffusion, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-First-Order Kinetics, Pseudo-Second-Order, Reactive Dyes, Removal, Solution, Suspension, Temkin, Temperature, Thermodynamics

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Full Text: [2009\Ads Sci Tec27, 701.pdf](2009/Ads%20Sci%20Tec27,%20701.pdf)

Abstract: The adsorption characteristics of magnetic Fe3O4 nano-particles synthesized by chemical co-precipitation for the removal of chromium(VI) ions from aqueous solutions and tannery effluents have been studied. The composition, size, morphology and magnetic properties of the nano-particles were characterized by FT-IR, XRD, TEM and VSM methods, respectively. Experiments were conducted in batch mode to observe the influence of different parameters such as pH, feed concentration, adsorbent dosage and temperature on the performance of the adsorbent. It was found that when the pH of the system was decreased from 7 to 2, the extent to which Cr(VI) ions were removed increased from 54% to 77%. The adsorption process was found to follow second-order kinetics and the rate constant was evaluated at 30°C. The Langmuir isotherm was found to provide a good fit to the experimental data. The adsorption capacity of magnetite nano-particles towards Cr(VI) ions at room temperature was 2.9508 mg/g, with the value increasing to 3.4454, 3.7592 and 4.0475 mg/g at 40ºC, 50ºC and 60°C, respectively. On the basis of the adsorption free energy change of 16.577 kJ/mol obtained at 30ºC, the adsorption mechanism was confirmed as being chemical in nature. The thermodynamic parameters for the adsorption process were also calculated from the experimental data. At an S/L ratio of 0.2 and under optimized conditions of pH, temperature and agitation, the removal of Cr(VI) ions from aqueous solution amounted to 85%. Regression analysis was performed and a correlation between percentage removal and operating parameters obtained.

Keywords: Adsorbent, Adsorbent Dosage, Adsorption, Adsorption Capacity, Adsorption Mechanism, Agitation, Analysis, Aqueous Solution, Aqueous Solutions, Batch, Batch Mode, Capacity, Carbon, Characteristics, Chemical, Chromium(VI), Composition, Concentration, Coprecipitation, Correlation, Cr(VI), Data, Effluents, Energy, Equilibrium, Experimental, Fe3O4, Feed, FT IR, FT-IR, FTIR, Hexavalent Chromium, Ions, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Magnetic, Magnetic Properties, Magnetite, Mechanism, Methods, Mode, Morphology, Nanoparticles, Performance, pH, Rate Constant, Reduction, Regression Analysis, Removal, Room Temperature, Second Order, Second Order Kinetics, Second-Order, Second-Order Kinetics, Separation, Size, Solution, Solutions, Tannery Waste-Water, Tem, Temperature, Thermodynamic, Thermodynamic Parameters, Value, XRD

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Full Text: [2009\Ads Sci Tec27, 723.pdf](2009/Ads%20Sci%20Tec27,%20723.pdf)

Abstract: The behaviour of different polymers in the adsorption and removal of bisphenol A (BPA) from aqueous solutions was examined in order to identify the mechanism controlling the process. Three polymers with different functional groups were prepared and employed in our laboratory; they were characterized both texturally and chemically in terms of their surface areas, pore-size distributions, total exchange capacities and other parameters. The adsorption isotherms of bisphenol A were obtained and accurately modelled by the three-parameter Langmuir-Freundlich (LF) isotherm, the binding parameters calculated directly by the LF fitting coefficients indicating that increasing temperature was helpful in causing the adsorption process to move from positive cooperativity to negative cooperativity. The kinetic data were found to be well represented by the pseudo-second-order kinetic model, indicating that the functional groups of the polymers had a significant influence on the adsorption mechanism of BPA. The adsorption of BPA basically depended on the chemical nature of the polymers and the pH value of the solution. The adsorption process was favoured by the molecular form of bisphenol A, since this controlled the surface complexes produced between the polymer surface and the bisphenol A molecules, with the resulting increase in adsorbent adsorbate interactions being positively influenced by the temperature.

Keywords: Activated Carbons, Adsorbent, Adsorption, Adsorption Isotherms, Adsorption Mechanism, Aqueous Solutions, Aqueous-Solutions, Behaviour, Binding, Bisphenol A, Bisphenol-A, Chemical, Chemistry, Data, Functional Groups, Isotherm, Isotherms, Kinetic, Kinetic Model, Langmuir-Freundlich, Mechanism, Model, Oxide-Water Interface, Pathways, pH, pH Value, Phase, Phenol Adsorption, Polymer, Polymers, Products, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Solution, Solutions, Surface, Surface Areas, Surface Complexes, Temperature, Value

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Full Text: [2009\Ads Sci Tec27, 785.pdf](2009/Ads%20Sci%20Tec27,%20785.pdf)

Abstract: The adsorption of Pb2+ and Ni2+ ions from aqueous solution onto montmorillonite (MMT) has been investigated at 293 K, 303 K, 313 K and 323 K using batch equilibrium experiments. In order to optimize the adsorption conditions, the effects of contact time, solution pH and initial metal ion concentrations were tested thoroughly. The adsorption isotherms were best described by the Langmuir model at lower temperatures, while the Freundlich model gave a better fit at higher temperatures. The theoretical saturated adsorption capacities of MMT for Pb2+ and Ni2+ ions at 293 K as calculated via the Langmuir isotherm were 133 g/kg and 56 g/kg, respectively. The kinetic data were poorly correlated by the pseudo-first-order model and the intraparticle diffusion equation, but were fitted perfectly by the pseudo-second-order kinetic model. For Pb2+ ions, the thermodynamic parameters ΔGads°, ΔHads° and ΔSads° were determined as -3.08 kJ/mol (at 293 K), 4.83 kJ/mol and 26.95 J/(mol K), respectively. For Ni2+ ions, the values of ΔGads°, ΔHads° and ΔSads° were -1.10 kJ/mol (at 293 K), 23.77 kJ/mol and 84.63 J/(mol K), respectively. The experimental results indicated that the adsorption processes for both Pb2+ and Ni2+ ions onto MMT were favourable, spontaneous and endothermic.

Keywords: Activated Carbon, Adsorption, Adsorption Capacities, Adsorption Isotherms, Alginate Beads, Aqueous Solution, Aqueous-Solutions, Batch, Bentonite, Biosorption, Ca-Alginate, Cadmium, Data, Diffusion, Endothermic, Equilibrium, Experimental, Experiments, Freundlich, Freundlich Model, Heavy-Metal, Intraparticle Diffusion, Ions, Isotherm, Isotherms, Kinetic, Kinetic Model, Langmuir, Langmuir Isotherm, Langmuir Model, Metal, Metal Ion, Model, Montmorillonite, Ni2+, Pb2+, pH, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Solution, Sorption, Thermodynamic, Thermodynamic Parameters, Time

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Full Text: [2009\Ads Sci Tec27, 835.pdf](2009/Ads%20Sci%20Tec27,%20835.pdf)

Abstract: The batch removal of hexavalent chromium from aqueous solution by chitosan under different experimental conditions, such as the pH value and the initial hexavalent chromium ion concentration. Was investigated. The adsorption of hexavalent chromium is highly pH-dependent, the results obtained in the present study indicating that the optimum pH for Cr(VI) ion removal was 4.0. The kinetics of the adsorption of Cr(VI) ions by chitosan were evaluated by the pseudo-first-order, pseudo-second-order. Elovich and intra-particle diffusion kinetic models. respectively. The results show that the pseudo-second-order kinetic model gave a good correlation (r2 = 0.9942) with the experimental data.

Keywords: Adsorption, Aqueous Solution, Batch, Chitosan, Chromium, Concentration, Correlation, Cr(VI), Data, Diffusion, Elovich, Experimental, Hexavalent Chromium, Intra-Particle Diffusion, Intraparticle Diffusion, Ions, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Metal-Ions, Model, Models, Peat, pH, pH Value, pH-Dependent, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Solution, Sorption, Value

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Full Text: [2009\Ads Sci Tec27, 845.pdf](2009/Ads%20Sci%20Tec27,%20845.pdf)

Abstract: Novel surface strontium(II) ion-imprinted adsorbent particles have been prepared via the copolymerization of chitosan as the monomer, gamma-(2,3-epoxypropoxy)propyltrimethoxysilane (KH-560) as the cross-linking agent and 2,2’-azobisisobutyronitrile (AIBN) as the initiator in the presence of SrCl2 center dot 6H2O. The prepared imprinted adsorbent was used for the selective solid-phase extraction (SPE) of trace Sr(II) ions in a practical sample prior to its determination by inductively coupled plasma atomic emission spectrometry (ICP-AES). The results suggest that the adsorption kinetic data accorded better with the pseudo-second-order model, while the adsorption equilibrium data gave a good fit to the Langmuir isotherm equation, yielding a maximum adsorption capacity of 27.58 mg/g and a Langmuir adsorption equilibrium coefficient of 0.0363 l/mg at 298 K. The relative selectivity coefficient values of Sr(II) ion-imprinted particles were several times greater than those for the non-imprinted matrix. The new Sr(II) ion-imprinted micro-beads were successfully applied for the separation of Sr(II) ions from river and clay samples. The detection limit (3 sigma) for Sr(II) ions as determined by flame atomic absorption spectrometry (FAAS) was 0.21 ng/ml. The relative standard deviation (RSD) for the determination of Sr(II) ions was 6-9% over the concentration range 0.03-0.3 mg/l.

Keywords: Absorption, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Adsorption Kinetic, Atomic Absorption Spectrometry, Atomic-Absorption-Spectrometry, Capacity, Characterization, Chitosan, Clay, Concentration, Copolymerization, Crosslinking, Cu(II), Data, Emission, Environmental-Samples, Equilibrium, Extraction, FAAS, Inductively Coupled Plasma, Ions, Isotherm, Kinetic, Langmuir, Langmuir Isotherm, Matrix, Metal-Ions, Model, Modified Silica-Gel, Particles, Plasma, Potassium, Preconcentration, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, River, Selective Recognition, Selectivity, Separation, Solid Phase Extraction, Solid-Phase Extraction, Spectrometry, Standard, Surface, Synthesis

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Full Text: [2009\Ads Sci Tec27, 947.pdf](2009/Ads%20Sci%20Tec27,%20947.pdf)

Abstract: The kinetics and equilibrium of the adsorption of Indanthrene Olive Green (IOG) from aqueous solution onto chitosan have been investigated. The chitosan was characterised in terms of its average degree of de-acetylation (DD) and by XRD, TGA/DTG, IR, SEM and specific BET surface area methods. Batch adsorptions experiments were carried out at different pH values and dye concentrations. It was found that the adsorption process was favoured by acidic pH conditions (4.0-6.0). The adsorption followed second-order rate kinetics and the experimental equilibrium data followed the Langmuir isotherm, thereby suggesting that chemisorption might be the major adsorption mode. Such adsorption also occurred on chitosan fibres, although to a significantly lower extent than on crushed chitosan. The corresponding thermodynamic parameters (ΔG°, ΔH° and ΔS°) were calculated. The positive values obtained for ΔH° (161.7 kJ/mol) and ΔS° [559.9 J/(mol K)] suggest that the adsorption process was endothermic, with the randomness of the system increasing during the adsorption process. A simplified adsorption model has also been proposed.

Keywords: Acid Dye, Adsorption, Affinity Support, Aqueous Solution, BET, BET Surface Area, Chemisorption, Chitosan, Coated Dialdehyde Cellulose, Comparative Adsorption, Cross-Linked Chitosan, Data, Dried Activated-Sludge, Dye, Endothermic, Equilibrium, Experimental, Experiments, IR, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Low-Cost Adsorbents, Methods, Methylene-Blue, Mode, Model, pH, Randomness, Rate Kinetics, Reactive Dyes, Removal, Second Order, Second-Order, SEM, Solution, Surface, Surface Area, Thermodynamic, Thermodynamic Parameters, Urea Nitrogen, XRD

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Full Text: [2009\Ads Sci Tec27, 965.pdf](2009/Ads%20Sci%20Tec27,%20965.pdf)

Abstract: The removal of chromium(VI) ions from water and wastewater through the use of activated maize cob (AMC) and activated banana peel (ABP) has been studied. In addition, the kinetics of the adsorption of Cr(VI) ions onto AMC and ABP were investigated. The effects of altering the initial Cr(VI) ion concentration, contact time and temperature on the removal process were studied. The removal of Cr(VI) ions increased with increasing temperature and depended on the initial Cr(VI) ion concentration, with complete removal being effected after a contact time of 80 min and 600 min for AMC and ABP, respectively. The process of Cr(VI) ion removal followed pseudo-second-order kinetics with the rate constants being determined at different temperatures in the range 20-40ºC. The activation energies for the adsorption of Cr(VI) ions onto AMC and ABP were calculated as 56.74 kJ/mol and 86.47 kJ/mol, respectively. Thermodynamic parameters such as the standard Gibbs’ free energy change (ΔG°ads), the standard entropy change (ΔS°ads) and the standard enthalpy change (ΔH°ads) were calculated. The thermodynamic studies revealed that the values of Auisfi were positive, suggesting that the adsorption process was endothermic in nature.

Keywords: Activation, Adsorbents, Adsorption, Aqueous-Solutions, Chromium(VI), Clay, Concentration, Cr(VI), Endothermic, Energy, Enthalpy, Entropy, Ions, Kinetics, Maize, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Rate Constants, Removal, Standard, Temperature, Thermodynamic, Thermodynamic Parameters, Thermodynamic Studies, Waste-Water, Wastewater, Water

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Full Text: [2009\Ads Sci Tec27, 975.pdf](2009/Ads%20Sci%20Tec27,%20975.pdf)

Abstract: Molecular imprinting has been conducted on the surface of TiO2 particles to enable the recognition of dibenzothiophene (DBT) molecules. This was achieved via the use of a novel surface molecular-imprinting technique. The adsorption behaviour of the dibenzothiophene-imprinted material (D-MIP/TiO2) was evaluated using batch adsorption experiments to determine the kinetic, isotherm and thermodynamic parameters. The experimental results showed that the adsorption process followed pseudo-second-order kinetics and that the experimental data were well fitted by the Freundlich adsorption equation. This indicated that adsorption involved a multilayer process. Values of the Gibbs’ free energy (ΔG°) ranged from -7.11 kJ/mol to -9.36 kJ/mol over the temperature interval 298-318 K, indicating that the adsorption was endothermic in nature. In addition, D-MIP exhibited selective recognition of DBT relative to other similar compounds such as benzothiophene (BT), 4-methyldibenzothiphene (4-MDBT) and 4,6-dimethyldibenzothiophene (4,6-DMDBT). In the corresponding selectivity test, D-MIP/TiO2 showed a greater adsorption capacity towards DBT than BT, 4-MDBT and 4,6-DMDBT. The large imprinting factor (ca. 2.5) exhibited by D-MIP/TiO2 for DBT could be explained in terms of a covalent assembly mechanism.

Keywords: 4,6-Dimethyldibenzothiophene, Adsorption, Adsorption Capacity, Assembly, Batch, Batch Adsorption, Behaviour, Capacity, Data, Desulfurization, Dibenzothiophene, Endothermic, Energy, Experimental, Experiments, Freundlich, Fuels, Interval, Ionic Liquids, Isotherm, Kinetic, Kinetics, Mechanism, Molecular Imprinting, Multilayer, Particles, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Selective Adsorption, Selectivity, Silica, Strategy, Surface, Temperature, Template, Thermodynamic, Thermodynamic Parameters, TiO2, TNT

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Full Text: [2010\Ads Sci Tec28, 23.pdf](2010/Ads%20Sci%20Tec28,%2023.pdf)

Abstract: Surface ion-imprinting technology was applied to prepare a new Sr(II) ion-imprinted polymer [Sr(II)-IP] by grafting chitosan-Sr(II) onto potassium titanate whiskers. The imprinting mechanism of the prepared polymer was examined, using infrared spectroscopy (IR), X-ray diffractometry (XRD) and scanning electron microscopy (SEM). The effects of pH and contact time were examined, together with the adsorption capacity and selectivity of the imprinted polymer. The adsorption isotherms could be fitted by the Langmuir model, with the dimensionless separation factor R-L indicated favourable adsorption. In addition, the kinetic data were fitted more closely by the pseudo-second-order kinetic model rather than the pseudo-first-order model. The values of the Gibbs’ free energy (ΔG(0)), standard entropy (ΔS-0) and standard enthalpy (ΔH-0) calculated from the adsorption data suggested that the adsorption of Sr(II) onto Sr(II)-IP was a spontaneous and endothermic process. The relative selectivity coefficients of Sr(II)-IP for Sr(II)/Cs(I) at different initial concentrations were 95.8, 320 and 1428.6, respectively, which were far greater than that of the non-imprinted polymer (NIP).

Keywords: Adsorption, Adsorption Capacity, Adsorption Isotherms, Aqueous-Solutions, Capacity, Chitosan, Cu(II), Data, Electron Microscopy, Endothermic, Energy, Enthalpy, Entropy, Equilibrium, Grafting, Infrared Spectroscopy, IR, Isotherms, Kinetic, Kinetic Model, Langmuir, Langmuir Model, Mechanism, Model, pH, Polymer, Potassium, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Scanning Electron Microscopy, Selectivity, SEM, Separation, Spectroscopy, Standard, Strontium, Synthesis, Technology, Waste, X-Ray, XRD

? Kousalya, G.N., Gandhi, M.R. and Meenakshi, S. (2010), Removal of toxic Cr(VI) ions from aqueous solution using nano-hydroxyapatite-based chitin and chitosan hybrid composites. *Adsorption Science & Technology*, **28** (1), 49-64.

Full Text: [2010\Ads Sci Tec28, 49.pdf](2010/Ads%20Sci%20Tec28,%2049.pdf)

Abstract: In the present investigation, bio-inorganic composites composed of nano-hydroxyapatite (n-HAp) with chitin and chitosan have been prepared and used for the removal of chromium(VI) ions from aqueous solution. Such composites exhibited a higher Cr(VI) ion sorption capacity than the individual components. The sorption capacities of n-HAp, n-HAp/chitin (n-HApC) composite and n-HAp/chitosan (n-HApCs) composite were found to be 2720, 2845 and 3450 mg/kg, respectively. Batch adsorption studies were conducted to optimize various equilibrating conditions such as the contact time, pH and co-ions. The sorbents were characterized by FT-IR spectroscopy, BET and EDXA analysis. The sorption process could be fitted by both the Freundlich and Langmuir isotherm models. Standard thermodynamic parameters such as the Gibbs’ free energy change, ΔG°, the standard enthalpy change, ΔH°, and the standard entropy change, ΔS°, were calculated in order to obtain an understanding of the nature of the sorption process. The kinetics of the reaction could be fitted by the pseudo-second-order and intra-particle diffusion models. The mechanism for Cr(VI) ion sorption onto the composites was established.

Keywords: Activated Alumina, Adsorption, Analysis, Aqueous Solution, Batch Adsorption, Bet, Capacity, Chitin, Chitosan, Chromium(VI), Composite, Composites, Cr(VI), Defluoridation, Diffusion, Energy, Enthalpy, Entropy, Equilibrium, Freundlich, FT-IR, FTIR, FTIR Spectroscopy, Heavy-Metals, Hexavalent Chromium, Intra-Particle Diffusion, Intraparticle Diffusion, Investigation, Ions, Isotherm, Isotherm Models, Kinetics, Langmuir, Langmuir Isotherm, Mechanism, Models, n-Hap, pH, Pseudo Second Order, Pseudo-Second-Order, Reduction, Removal, Solution, Sorbents, Sorption, Sorption Capacity, Sorption Process, Spectroscopy, Standard, Synthetic Hydroxyapatite, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Understanding

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Full Text: [2010\Ads Sci Tec28, 125.pdf](2010/Ads%20Sci%20Tec28,%20125.pdf)

Abstract: This study was aimed at investigating the kinetic modelling of the treatment of nickel(II) ions in electroplating effluent by an activated carbon prepared from Anas platyrhyncha egg shell. The following process variables were chosen for optimizing the batch operation: Ni(II) ion conc. in effluent (10-50 mg/l), pH (4-8), adsorbent dosage (0.3-0.9 g), temperature (30-70ºC). A five-level, four-variable central composite design was used to evaluate the effects of these parameters on the adsorption of Ni(II) ions onto Anas platyrhyncha egg shell. The optimization process demonstrated significant interaction between the process variables studied. Adsorption kinetic data were tested using the pseudo-first-order, pseudo-second-order and intra-particle diffusion models. Kinetic studies revealed that the adsorption process was best described by the pseudo-second-order reaction model. Reichenberg plots were used to calculate the rate-controlling parameters and the effective diffusion coefficient. Adsorption occurs via particle diffusion at low concentrations, while film diffusion becomes the rate-determining step at higher concentrations.

Keywords: Activated Carbon, Adsorbent, Adsorbent Dosage, Adsorption, Adsorption Kinetic, Aqueous-Solution, Batch, Biosorption, Cadmium, Carbon, Composite, Data, Design, Diffusion, Diffusion Coefficient, Electroplating, Equilibrium, Film Diffusion, Interaction, Intra-Particle Diffusion, Intraparticle Diffusion, Ions, Kinetic, Kinetic Modelling, Kinetic Studies, Kinetics, Lead, Model, Modelling, Models, Ni(II), Ni(II) Ions, Ni2+, Nickel, Nickel(II), Nickel(II) Ions, Operation, Optimization, Particle Diffusion, pH, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Rate-Determining Step, Removal, Sorption, Temperature, Thermodynamic Parameters, Treatment, Waste

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Full Text: [2010\Ads Sci Tec28, 137.pdf](2010/Ads%20Sci%20Tec28,%20137.pdf)

Abstract: Sphingomonas paucimobilis biomass has been successfully utilized to degrade several persistent organic pollutants (POPs). However, few studies have been conducted using it to remove heavy metal ions from aqueous solutions. In the present study, the biosorption of copper(II) ions was investigated using non-living *Sphingomonas paucimobilis* biomass isolated from activated sludge, as obtained from the Lianyungang Dapu sewage treatment plant in China. The effects of several parameters including solution pH, contact time and ionic strength on the Cu(II) ion uptake were studied. The biomass was characterized by scanning electron microscopy/X-ray energy dispersive spectroscopy (SEM-EDS) and Fourier-transform infrared spectrometry (FT-JP). The applicability, of the Langmuir and Freundlich models was tested. The correlation coefficients (R-2) of. both models were greater than 0.9. The maximum adsorption capacities were found to be 50.1 mg/g for Cu(II) ions at 20ºC. The adsorption process was rapid and followed pseudo-second-order kinetics. Optimum adsorption was achieved at pH 5. The adsorption was also found to be dependent on the NaCl concentration employed. The Sphingomonas paucimobilis biomass could serve as an adsorbent for the removal of Cu(II) ions from industrial effluents.

Keywords: Activated Sludge, Adsorbent, Adsorption, Adsorption Capacities, Aqueous Solutions, Biomass, Biosorption, Cadmium, China, Concentration, Copper(II), Correlation, Cu(II), Cu(II) Ion, Cu(II) Ions, Effluents, Energy, Equilibrium, Freundlich, Hard, Heavy Metal, Heavy Metal Ions, Ionic Strength, Ions, Kinetics, Langmuir, Lead, Metal, Metal Ions, Metal-Ions, Models, Nacl, Non-Living, Organic, Organic Pollutants, Persistent Organic Pollutants, pH, Plant, Pollutants, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Pseudomonas-Putida, Removal, Sewage, Sludge, Solution, Solutions, Spectrometry, Spectroscopy, Strength, Treatment, Uptake

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Full Text: [2010\Ads Sci Tec28, 163.pdf](2010/Ads%20Sci%20Tec28,%20163.pdf)

Abstract: In the present investigation, an evaluation has been made of the adsorption of Cd(II) ions onto Psidium guvajava L leaf powder (PGL). Scanning electron micrographs of the powder as-prepared showed that PGL possessed an irregular texture consisting of globular and elongated grains. The porosity of the structure was also noted. After adsorption of Cd(II) ions, ca. 30% of the powdered grains on the resulting surface showed a pixel concentration of Cd(II) ions, indicating the adsorption of Cd(II) ions by selective grains. The FT-IR spectra of the as-prepared powder and the Cd(II) ion-loaded powder were similar but the absorption bands were shifted by 5-35 cm-1 after the adsorption process. The experimental parameters chosen for adsorption studies included time, pH, particle size, temperature, adsorbate, biosorbent, anions and Pb(II) ion concentrations. The kinetic data followed linear and non-linear pseudo-second-order kinetics. The adsorption of Cd(II) ions increased from zero to 60.39% as the pH of the aqueous solution was increased from 2 to 3.5, with a further increase in pH to 5.5 resulting in a marginal increase in the extent of adsorption to 63.7%. The isothermal data were well fitted by the Freundlich adsorption model. On the basis of the Langmuir isotherm model, the maximum loading capacity was calculated as 31.15 mg/g. The presence of chloride or sulphate anions had an adverse effect on the Cd(II) ion uptake by PGL. Lead(II) ions were adsorbed preferentially from binary Cd(II)/Pb(II) ion solutions, thereby decreasing the Cd(II) ion uptake. The thermodynamic parameters for the process were also estimated.

Keywords: Absorption, Activated Carbon, Adsorption, Agricultural Waste, Anions, Aqueous Solution, Aqueous-Solutions, Biosorbent, Cadmium(II), Capacity, Cd(II), Cd(II) Ions, Chloride, Coconut Copra Meal, Component Adsorption, Concentration, Contaminated Water, Data, Evaluation, Experimental, Freundlich, FT-IR, FTIR, FTIR Spectra, Functional-Groups, Heavy-Metal Ions, Investigation, Ions, Isotherm, Isotherm Model, Isothermal, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Lead(II), Lead(II) Ions, Loading, Model, Particle Size, Pb(II), Pb(II) Ions, pH, Porosity, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Removal, Selective Removal, Size, Solution, Solutions, Structure, Surface, Temperature, Thermodynamic, Thermodynamic Parameters, Uptake, Wastewater

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Full Text: [2010\Ads Sci Tec28, 195.pdf](2010/Ads%20Sci%20Tec28,%20195.pdf)

Abstract: The fruit peel of pomegranate (*Punica granatum*) exhibits a high affinity for Cu(II), Ni(II), Cd(II) and Zn(II) ions. The maximum adsorption observed was that of Cu(II) ions, followed by Zn(II), Cd(H), Ni(II) and Cr(VI) ions. The adsorption of Cu(H) ions was dependent on the initial Cu(II) ion concentration, pH, adsorbent dose, temperature and contact time. The adsorption isotherms could be described by the Langmuir and Freundlich equations. Application of the x(2)-test indicated that both these models were best obeyed at 20ºC. Thermodynamic parameters such as ΔH-0, ΔS-0 and ΔG(0) were evaluated, the adsorption process being endothermic and spontaneous in nature. The value of the mean free energy indicated that the adsorption process was chemical in nature. Kinetic data showed that the pseudo-second-order model provided the best fit for the experimental data. Attempts were made using batch and column methods to desorb Cu(II), Ni(II), Zn(H), Cd(H) and Cr(VI) ions from synthetic wastewater as well as from wastewater derived from electroplating activities. The breakthrough capacities of Cu(II), Ni(H), Zn(II), Cd(H) and Cr(VI) ions were 6, 2, 2, 2 and 0 mg/g, respectively, when a mixture of these metal ions was treated. The adsorbent was utilized to recover Cr(VI) ions from electroplating wastewater.

Keywords: Adsorbent, Adsorbent Dose, Adsorption, Adsorption Isotherms, Aqueous-Solution, Batch, Breakthrough, Cd(II), Chemical, Column, Concentration, Cr(VI), Cu(II), Cu(II) Ion, Cu(II) Ions, Data, Electroplating Waste-Water, Endothermic, Energy, Experimental, Freundlich, Ions, Isotherms, Kinetic, Langmuir, Metal, Metal Ions, Methods, Model, Models, Ni(II), pH, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Recovery, Removal, Sorption, Temperature, Thermodynamic, Thermodynamic Parameters, Value, Wastewater, Zn(II), Zn(II) Ions

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Full Text: [2010\Ads Sci Tec28, 213.pdf](2010/Ads%20Sci%20Tec28,%20213.pdf)

Abstract: The biosorption of manganese(II) ions from aqueous solution by glutaraldehyde cross-linked chitosan (GCC) was studied under equilibrium conditions. The biosorbent was characterised by FT-IR spectroscopy and scanning electron microscopy (SEM) methods. The effects of the variable experimental parameters such as pH, metal ion concentration, adsorbent amount, contact time and temperature on the adsorption process were investigated. The equilibrium adsorption data were interpreted via the Freundlich, Langmuir and Sips isotherm models. Based on the error function values, the kinetic data were fitted to a better extent by the pseudo-second-order kinetic model and the chemisorption model, relative to the pseudo-first-order, fractional order and Weber-Morris models. The monolayer adsorption capacity of GCC as obtained from the Langmuir isotherm at 25 degrees C was found to be 278 mg/g. Thermodynamic studies indicated that the adsorption process was spontaneous (ΔG(0) < 0) and exothermic (ΔH-0 < 0).

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Aqueous Solution, Biosorbent, Biosorption, Capacity, Chemisorption, Chitosan, Coated Perlite, Concentration, Cross-Linked, Cross-Linked Chitosan, Crosslinked Chitosan, Data, Electron Microscopy, Equilibrium, Error, Exothermic, Experimental, Freundlich, FT-IR, FTIR, FTIR Spectroscopy, Function, Glutaraldehyde, Hexavalent Chromium, Ions, Isotherm, Kinetic, Kinetic Model, Langmuir, Langmuir Isotherm, Manganese(II), Metal, Methods, Mn(II), Model, Models, Monolayer, Parameters, Pb(II), pH, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Scanning Electron Microscopy, SEM, Solution, Sorption, Spectroscopy, Temperature, Thermodynamic

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Full Text: [2010\Ads Sci Tec28, 243.pdf](2010/Ads%20Sci%20Tec28,%20243.pdf)

Abstract: The removal of uranyl ions from aqueous solutions with peat moss was investigated by batch methods. The effects of factors such as the pH, ionic strength, contact time, peat moss dosage and humic acid concentration on uranyl ion adsorption were studied. The results indicated that the adsorption of uranyl ions onto peat moss increased with increasing pH within the range 2-6, with higher humic acid concentrations and with decreasing ionic strength. The kinetics of the adsorption process were well described by the Elovich equation, while the equilibrium adsorption isotherm was fitted reasonably well by the Freundlich adsorption model. The calculated fractal dimension of granular peat moss. was 2.3384.

Keywords: Adsorption, Adsorption Isotherm, Aqueous Solutions, Batch, Concentration, Elovich, Elovich Equation, Equilibrium, Fractal, Freundlich, Humic Acid, Humic Substances, Ionic Strength, Ions, Isotherm, Kinetics, Methods, Model, Moss, Peat, Peat Moss, pH, Removal, Solutions, Sorption, Strength, U(VI), Uranium, Uranyl Ions

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Full Text: [2010\Ads Sci Tec28, 313.pdf](2010/Ads%20Sci%20Tec28,%20313.pdf)

Abstract: Continuous fixed-bed studies were undertaken to evaluate the performance of manganese oxide-coated sand (MOCS) as an adsorbent for the removal of uranium(VI) ions from aqueous solution under the effect of various process parameters such as the bed depth, the flow rate, the presence of salt and the initial U(VI) ion concentration. The U(VI) ion uptake by MOCS increased with initial U(VI) ion concentration and bed height, but decreased as the flow rate increased. A shorter breakthrough time was observed in the presence of salt. The experimental data obtained from the breakthrough curves were analyzed using the Thomas model. The BDST model was also applied to predict the service times for other flow rates and initial concentrations. The results showed that the Thomas model was suitable for the description of the whole breakthrough curve, while the data were in good agreement with the BDST model. The columns were regenerated by eluting the bound U(VI) ions with 0.5 mol/l HNO3 solution after the adsorption studies. MOCS could be re-used to adsorb U(VI) ions at a comparable capacity. Compared to virgin sand, the removal of U(VI) ions from MOCS proceeded more readily.

Keywords: Activated Carbon, Adsorbent, Adsorption, Aqueous Solution, BDST, BDST Model, Bed, Behavior, Breakthrough, Breakthrough Curve, Breakthrough Curves, Capacity, Column, Concentration, Data, Experimental, Fixed Bed, Flow, Flow Rate, Ions, Lead(II) Ions, Manganese, Manganese Oxide Coated, Metal-Ions, Methylene-Blue, Model, Natural Zeolite, Performance, Rates, Removal, Salt, Sand, Service, Solution, Sorption, Thomas Model, U(VI), Uptake, Uranium(VI), Uranyl Ions

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Full Text: [2010\Ads Sci Tec28, 327.pdf](2010/Ads%20Sci%20Tec28,%20327.pdf)

Abstract: Activated carbons prepared from hazelnut shells and apricot stones were used as adsorbents for the removal of copper(II) ions from aqueous solution. Adsorption studies were carried out by varying the initial metal ion concentration, the temperature and the pH. The amount of Cu(II) ions adsorbed increased with increasing temperature, pH and initial Cu(II) ion concentration. The equilibrium data were analyzed using the Freundlich and Langmuir isotherms. The parameters of the isotherm models were determined for two activated carbons; it was found that the Freundlich model showed a better fit of the adsorption data than the Langmuir model. The physical and chemical properties of hazelnut shell and apricot stone activated carbons were determined for comparative purposes.

Keywords: Activated Carbons, Adsorbents, Adsorption, Agricultural by-Products, Aqueous Solution, Aqueous-Solutions, Chemical, Chemical Activation, Concentration, Copper(II), Cu(II), Cu(II) Ion, Cu(II) Ions, Data, Date Pits, Equilibrium, Freundlich, Freundlich Model, Hazelnut, Hazelnut Shell, Heavy-Metal Ions, Industrial Waste-Water, Ions, Isotherm, Isotherms, Langmuir, Langmuir Isotherms, Langmuir Model, Low-Cost Adsorbent, Metal, Methylene-Blue Adsorption, Model, Models, pH, Physical, Removal, Solution, Temperature, Thermodynamic Parameters, ZnCl2 Activation

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Full Text: [2010\Ads Sci Tec28, 363.pdf](2010/Ads%20Sci%20Tec28,%20363.pdf)

Abstract: The ability of alginic acid fibres to remove Zn(II) ions from aqueous solution was investigated by batch experiments. The effect of experimental parameters including pH, agitation time, initial Zn(II) ion concentration, temperature and biosorbent dosage on the biosorption of Zn(II) ions from aqueous solution was studied. Thermodynamic studies of Zn(II) ion biosorption demonstrated the exothermic nature of the process. Kinetic studies showed that the biosorption conformed to the pseudo-second-order and intra-particle diffusion models. The Langmuir and Freundlich isotherm models provided a good fit to the experimental data. The activation energy for the biosorption process suggested that it occurred in a physical manner. Alginic acid fibres have been demonstrated to be effective marine materials for the removal of Zn(II) ions from aqueous solution.

Keywords: Activated Carbon, Activation, Activation Energy, Adsorption, Agitation, Alginic Acid, Aqueous Solution, Aqueous-Solution, Batch, Batch Experiments, Biosorbent, Biosorption, Concentration, Copper(II) Ions, Data, Diffusion, Divalent Metal-Ions, Energy, Equilibrium, Exothermic, Experimental, Experiments, Freundlich, Freundlich Isotherm, Intra-Particle Diffusion, Intraparticle Diffusion, Ions, Isotherm, Kinetic, Kinetic Studies, Kinetic-Models, Langmuir, Models, pH, Physical, Pseudo Second Order, Pseudo-Second-Order, Removal, Solution, Sorption, Temperature, Thermodynamic, Zinc(II), Zn(II), Zn(II) Ion, Zn(II) Ions

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Full Text: [2010\Ads Sci Tec28, 449.pdf](2010/Ads%20Sci%20Tec28,%20449.pdf)

Abstract: The simultaneous biosorption of chromium(III) and copper(II) ions onto Sargassum sp. alga in a fixed-bed column reactor was investigated. Experiments were undertaken to determine the effect of the feed concentration (1, 2, 3 and 6 mequiv/l) and the composition of the metal ion solution [0.25, 0.50 and 0.75 Cu(II)/Cr(III) ratio] on the behaviour of the breakthrough curves. A mathematical model was applied to describe the biosorption in a fixed-bed column. Equilibrium was described in this model in terms of a binary Langmuir-type adsorption process, together with mass transfer in the biosorbent based on the Linear Driving Force (LDF) model. The partial differential equations for the system were solved numerically by the finite volume method. The proposed mathematical model for the biosorption process provided a satisfactory description of the dynamics of metal ion removal in the column relative to the experimental data obtained. The adsorptive capacity of the biomass for Cr(III) ions in the binary system was greater than that for Cu(II) ions. The developed model could provide a useful tool for the optimization of Cr(III) and Cu(II) ion removal processes by Sargassum sp. biomass and the design of the corresponding fixed-bed columns.

Keywords: Activated Carbon, Adsorption, Aqueous-Solution, Biomass, Biosorption, Chromium(III), Copper(II), Cr(III), Cu(II), Equilibrium, Exchange, Fixed-Bed Column, Ions, Metal Biosorption, Metal Ion, Microalgae, Model, Removal, Sargassum, Waste-Water

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Full Text: [2011\Ads Sci Tec28, 465.pdf](2011/Ads%20Sci%20Tec28,%20465.pdf); [2011\Ads Sci Tec-Ho1.pdf](2011/Ads%20Sci%20Tec-Ho1.pdf); [2011\Ads Sci Tec-Ho.pdf](2011/Ads%20Sci%20Tec-Ho.pdf)

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Full Text: [2010\Ads Sci Tec28, 467.pdf](2010/Ads%20Sci%20Tec28,%20467.pdf)

Abstract: The adsorption performance of a low-cost adsorbent (IS), viz, an iron-containing waste sludge arising during a hot-dip galvanizing process, towards the removal of As(III) ions from synthetic aqueous solutions and natural underground water was examined. The adsorption process was best described by the pseudo-second-order kinetic equation. The equilibrium adsorption data were well described by the Langmuir model. The value of the dimensional separation factor, R-L, indicated favourable adsorption. The maximum adsorption capacity of IS was 625 mu g As(III)/g. The variation in the extent of adsorption with temperature was used to evaluate the thermodynamic parameters for the adsorption process. The values of ΔH-0 and ΔG(0) obtained demonstrated that the adsorption process was exothermic and spontaneous. The studied material exhibited an excellent As(III) ion adsorption performance from both synthetic solutions and a natural water sample. Moreover, no secondary contaminated substances arise if the exhausted adsorbent is recycled (e.g. in glass applications).

Keywords: Arsenic Removal, Sorption, Water

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Full Text: [2010\Ads Sci Tec28, 499.pdf](2010/Ads%20Sci%20Tec28,%20499.pdf)

Abstract: The biosorption of Ni(II) ions by brown Laminaria japonica algae immobilized in sodium alginate and glutin beads was investigated. The kinetics of Ni(H) ion biosorption within the immobilized L. japonica beads were described well by the pseudo-second-order model. The equilibrium curves describing Ni(II) ion biosorption by the immobilized algal beads were fitted by the Langmuir and Freundlich isotherm models. The maximum biosorption capacity for Ni(II) ions in the immobilized algae beads was found to be 39.43 mg/g. Fourier-transform infrared spectrometric analysis of powdered L. japonica before and after biosorption of Ni(II) ions indicated that several functional groups in the algal cells (-OH, -NH2, -CH2, -CH3, -C=O, -N-H, -C-H, -C-O and -C=O) play an important role in the biosorption of Ni(II) ions by L. japonica.

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Full Text: [2010\Ads Sci Tec28, 533.pdf](2010/Ads%20Sci%20Tec28,%20533.pdf)

Abstract: Lubricant refineries are facing pollution problems associated with the occasional loss of furfural. This constitutes both an economic loss and an environmental hazard, especially for aquatic organisms. Some studies on the removal of furfural by adsorption onto hydrophobic polymeric resins (XAD-4 and XAD-7), activated carbon and the nanoporous material MCM-48 have been published, but none provides information on the adsorption of furfural onto clays. In the present work, we have studied the efficiency of sodium bentonite modified with the cationic surfactant cethyltrimethylammonium bromide (CTAB) in the adsorption of furfural. The structures of both natural and modified bentonites have been examined using XRD and FT-IR analyses. Adsorption studies were performed in a batch system, with the effects of various experimental parameters such as the contact time, the organobentonite concentration, pH, the initial furfural concentration and the temperature being evaluated. Kinetic results showed that furfural could be removed by CTAB-bentonite after contact for 6 h, with the adsorption process being well described by the pseudo-second-order reaction model. Furfural sorption onto CTAB-bentonite was characterized by a linear isotherm, with the adsorption capacity towards furfural being reduced by increasing temperature. A comparison of furfural adsorption capacities revealed that the capacities decreased in the following order: CTAB-bentonite > XAD-4 > XAD-7.

Keywords: Adsorbents, Biomass, Hydrocarbons, Modified Bentonite, Montmorillonite, Organic Contaminants, Phenols, Pollutants, Sorption, Water

? Sartape, A.S., Raut, P.D. and Kolekar, S.S. (2010), Efficient adsorption of chromium(VI) ions from aqueous solution onto a low-cost adsorbent developed from *Limonia acidissima* (Wood Apple) shell. *Adsorption Science & Technology*, **28** (6), 547-560.

Full Text: [2010\Ads Sci Tec28, 547.pdf](2010/Ads%20Sci%20Tec28,%20547.pdf)

Abstract: The removal of chromium(VI) ions from aqueous solution was studied using Limonia acidissima (wood apple) shell activated carbon. The removal extent was found to be a maximum at a pH value of 2, with the low-cost adsorbent having an adsorption capacity of 13.74 mg/g. The material employed was characterized by scanning electron microscopy (SEM), Fourier-transform infrared spectroscopy (FT-IR) and elemental analysis. The linear Freundlich and Langmuir adsorption isotherm models were applied to describe the experimental equilibrium isotherms. The results showed that the Langmuir equation gave a better fit to the experimental data than the Freundlich equation. The pseudo-first-order and pseudo-second-order models were applied to the adsorption kinetics of Cr(VI) ions onto wood apple shell activated carbon. Thermodynamic parameters such as the standard enthalpy (ΔH-0), the Gibbs’ free energy (ΔG(0)) and the standard entropy (ΔS-0) were evaluated and indicated that the sorption process was spontaneous and endothermic in nature. The results demonstrated that wood apple shell activated carbon may be effectively used for the inexpensive removal of Cr(VI) ions from aqueous solution.

Keywords: Chitosan, Coconut Shell, Cr(VI), Heavy-Metals, Hexavalent Chromium, Kinetics, Modified Activated Carbon, Removal, Treated Sawdust, Waste-Water

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Full Text: [2010\Ads Sci Tec28, 601.pdf](2010/Ads%20Sci%20Tec28,%20601.pdf)

Abstract: Trihalomethanes (THMs) are carcinogenic by-products of disinfection that are present in drinking water. In the present research, adsorption and photodegradation, either individually or in tandem, were employed for the removal of the principal THMs found in water supply systems. The effects of pH, contact time, adsorbents and adsorbate concentration on the adsorption system were investigated. The Langmuir and Freundlich adsorption isotherm models were used to analyze the resulting adsorption data. Photodegradation of THMs was carried out in the presence and absence of activated carbon. The integration of adsorption and photodegradation systems as a hybrid treatment process resulted in a synergetic enhancement of the THM removal efficiency. The kinetics of THM removal were found to follow the pseudo-second-order model rather than the Langmuir Hinshel wood pseudo-first-order model.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherm, Carbon Nanotubes, Chlorinated Hydrocarbons, Disinfection, Drinking-Water, Dye, Freundlich, Isotherm, Kinetics, Langmuir, Oxidation-Kinetics, pH, Products, Removal, Spheres, Volatile Organic-Compounds

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Full Text: [2010\Ads Sci Tec28, 641.pdf](2010/Ads%20Sci%20Tec28,%20641.pdf)

Abstract: Rice husk modified with oxalic acid (MRH) was tested as a lowcost adsorbent for the removal of Neutral Red (NR) dye from aqueous solutions employing batch adsorption procedures. Such studies were conducted by varying various parameters such as the pH, the adsorbent dosage, the salt concentration, the contact time, the concentration of the adsorbate and the temperature. The kinetic experimental data were analyzed using three kinetic equations, viz, the pseudo-first-order equation, the pseudo-second-order equation and the intraparticle diffusion model equation, to examine the mechanism of adsorption and the potential rate-controlling step. The mechanism of the process was found to be complex, consisting of both surface adsorption and pore diffusion. The values of the effective diffusion parameter, D-eff, were estimated to be of the order of 10-8 cm2/s, indicated that intra-particle diffusion was not the rate-controlling step. The equilibrium adsorption data obtained at various temperatures were analyzed using the Langmuir, Freundlich and Redlich Peterson isotherm models using non-linear regressive analysis. The equilibrium adsorption results were better fitted by the Langmuir and Redlich Peterson isotherms relative to the Freundlich model. Calculated thermodynamic parameters showed that the adsorption of NR onto MRH was feasible, spontaneous and endothermic under the studied conditions. The carboxyl groups on the surface of the modified rice husk (MRH) were primarily responsible for the sorption of NR. It is suggested that MRH may be suitable as an adsorbent material for adsorbing NR from aqueous solutions.

Keywords: Activated Carbon, Adsorption, Citric-Acid, Dye, Equilibrium, Fly-Ash, Freundlich, Heavy-Metals, Isotherm, Isotherms, Kinetic, Langmuir, Malachite Green, Methylene-Blue Adsorption, Nonlinear, pH, Reactive Dyes, Rice Husk, Sorption, Thermodynamic, Thermodynamic Parameters, Waste-Water, Wheat-Straw

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Full Text: [2010\Ads Sci Tec28, 777.pdf](2010/Ads%20Sci%20Tec28,%20777.pdf)

Abstract: As a model protein with quite large dimensions, Bovine Serum Albumin (BSA) has been used to evaluate the influence of the distinct pore structural characteristics of three mesocellular foam (MCF) materials prepared with or without the addition of ammonium fluoride and with varying 1,3,5-trimethylbenzene/Pluronic P123 (TMB/P123) ratios. SBA-15 was also studied for comparative purposes. Characterisation by X-ray diffraction and electron microscopy confirmed the characteristic spheroid cell structure of the MCF pores. Nitrogen adsorption/desorption isotherms at 77 K revealed the different pore structural parameters of the MCF, viz, pore volume (1.8-2.4 cm3/g), cell size (24.6-28.5 nm) and window size (11.3-17.3 nm), as obtained by the NLDFT method. The equilibrium adsorption isotherms and the kinetic adsorption data for BSA at 298 K and pH 5 were well fitted by the Langmuir model and pseudo-second-order kinetic model, respectively. The results showed that adsorption onto the material possessing a window size of 11.3 nm was mostly restricted to the external surface, while a considerable increase in the maximum adsorption capacity from 120 mg/g to 500-600 mg/g was observed when the window size was above the critical dimension of 13.9 nm. In the latter cases, the maximum adsorption capacities could be related to the pore volume rather than to the total surface area. The confined BSA molecules were strongly immobilised in the cells, since only a small proportion was desorbed from the material with windows of 17.3 nm dimensions on contact with a buffer solution of pH 7.

Keywords: Adsorption, Adsorption Isotherms, Ammonium, Delivery, Electron Microscopy, Equilibrium, Functionalized SBA-15, Isotherms, Kinetic, Kinetic Model, Langmuir, Lysozyme, pH, Pore-Size, Protein Adsorption, SBA-15, Silica

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Full Text: [2010\Ads Sci Tec28, 847.pdf](2010/Ads%20Sci%20Tec28,%20847.pdf)

Abstract: Modification of raw bentonite from Ponorogo, East Java, Indonesia by microwave irradiation using cetyltrimethylammonium bromide (CTAB) was studied. The adsorption capabilities of raw bentonite and its modified form were examined through their use in the removal of Acid Blue 129 from aqueous solution. The adsorption isotherm and kinetic experiments were conducted at four temperatures (25, 30, 40 and 50ºC). The fitting of the corresponding experimental data was tested using the temperature-dependent forms of the Langmuir, Freundlich, Sips and Toth equations. The Sips equation gave a better representation of the adsorption data, together with reasonable values of the fitted parameters. Two well-known kinetic models, the pseudo-first- and pseudo-second-order, were used to correlate the adsorption kinetic data, with the pseudo-first-order model giving the better results. Both physical and chemical adsorption mechanisms occurred during the adsorption process, with the main controlling mechanism being physical adsorption.

Keywords: Adsorption, Adsorption Isotherm, Aqueous Solution, Bentonite, Freundlich, Isotherm, Isotherms, Kinetic, Kinetic Models, Langmuir, Mechanism, Modification, Removal, Toth

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Full Text: [2010\Ads Sci Tec28, 869.pdf](2010/Ads%20Sci%20Tec28,%20869.pdf)

Abstract: In the present work, *Azadirachta indica* (neem) leaves were converted to a powder for use in the separation of Cu(II) ions from water. The powdered biomass was investigated as a sorbent for Cu(II) ions employing pH, time, initial Cu(II) ion concentration and the amount of sorbent as the experimental variables. At very low pH, Cu(II) ions were incapable of competing effectively with H+ ions for the sorption sites, but at the natural pH (5.6) of the aqueous Cu(II) ion solution up to 90% of the Cu(II) ions could be separated by sorption onto 4 g of *Azadirachta indica* leaf powder (AILP) from an aqueous solution of 50 mg/l concentration. The experimental data were well fitted by the Langmuir and Freundlich isotherm equations and followed pseudo-second-order kinetics. The Langmuir monolayer capacity of AILP for Cu(II) ions was 6.7-33.3 mg/g, which could be considered as reasonable. *Azadirachta indica* leaf powder could be a very effective sorbent for Cu(II) ions from an aqueous medium. The cellulosic units present in AILP provide a matrix of OH-, COO-, CN- and other anions that bind Cu(II) ions to the surface. The process was exothermic with ΔH-0 values of -96.1 kJ/mol to -105.4 kJ/mol, reflecting the strong Cu(II)-AILP linkages formed. This was supported by an appropriate increase in the standard entropy change and a decrease in the Gibbs’ free energy.

Keywords: Acidic-Solutions, Adsorption, Aqueous Solution, Aqueous-Solutions, Biosorption, Copper(II), Cu(II), Equilibrium, Freundlich, Freundlich Isotherm, Isotherm, Kinetics, Langmuir, Metal-Ions, pH, Removal, Residues, *Rhizopus-arrhizus*, Separation, Sorption

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Full Text: [2011\Ads Sci Tec29, 83.pdf](2011/Ads%20Sci%20Tec29,%2083.pdf)

Abstract: The effectiveness of lignite for the removal of Pb(II) ions from aqueous solution has been evaluated. The maximum adsorption of Pb(II) ions onto lignite was 98%. The adsorption depends on the initial concentration of Pb(II) ions, the pH, the adsorbent dosage, the temperature and the contact time. Kinetic studies showed that the pseudo-second-order kinetic model provided the best fit to the experimental data. The adsorption process was found to be endothermic and spontaneous. The mean free energy values indicated that adsorption occurred via a chemisorption process. Both the Langmuir and Freundlich models provided good fits to the experimental data obtained at 40ºC, as indicated by the chi(2)-test. The breakthrough and exhaustive capacities were found to be 5 mg/g and 35 mg/g, respectively. The percentage recovery of adsorbed Pb(II) ions by column methods was ca. 80% when 0.1 M HCI was used as the eluent.

Keywords: Activation, Adsorption, Agricultural Waste, Bentonite, Cd(II), Heavy-Metals, Ions, Kinetic, Langmuir and Freundlich Models, Model, Pb(II), Pb(II) Ions, Pb2+, pH, Pseudo-Second-Order, Sorption, Waste-Water

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Full Text: [2011\Ads Sci Tec29, 185.pdf](2011/Ads%20Sci%20Tec29,%20185.pdf)

Abstract: Raw palygorskite was modified by the addition of selected surfactants, viz. hexadecyltrimethylammonium bromide (CTAB), cetylpyridinium bromide (CPB) and octadecyldimethylbenzyl ammonium chloride (ODBAC). These modified clays were used as sorbents for the adsorptive removal of 2,6-dichlorophenol (2,6-DCP) from aqueous solution. Characterization of the sorbents was achieved by Fourier-transform infrared (FT-IR) analysis, nitrogen adsorption/desorption measurements and particle-size analysis. The adsorptive performance of the modified palygorskites towards the removal of 2,6-DCP from aqueous solution was studied by batch methods. In addition, the influence of contact time, pH and temperature on the adsorption process was investigated in detail. The equilibrium data for the three modified sorbents were well fitted by the Langmuir model. It was found that the monolayer adsorption capacity increased with increasing contact time and solution temperature, respectively. Application of the pseudo-first-order and pseudo-second-order kinetic models to the kinetic data showed that the pseudo-second-order kinetic model provided an excellent fit (R2 > 0.99). In addition, the film diffusion, pore diffusion and intra-particle diffusion models were also used to investigate the adsorption mechanism. Intra-particle diffusional analysis indicated that 2,6-DCP molecules diffused rapidly during the initial adsorption stage, followed by a slower stage and finally the establishment of an equilibrium condition. Thermodynamic studies showed that the adsorption of 2,6-DCP onto the three sorbents examined occurred spontaneously and that the process was endothermic in nature. The results indicate that the surfactant-modified palygorskite exhibited a significant potential as a sorbent material for the removal of phenolic compounds from aqueous solution.

Keywords: Activated Carbon, Adsorption, Ammonium, Aqueous Solution, Cashew Nut Shell, Characterization, Chloride, Clays, Diffusion, Dye, Equilibrium, FT-IR, FTIR, Isotherm, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Langmuir, Mechanism, Modified Bentonite, Natural Zeolite, Parameters, pH, Phenolic-Compounds, Removal, Resins, Sorbent, Sorption, Temperature, Thermodynamic, Thermodynamic Studies, Thermodynamics

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Full Text: [2011\Ads Sci Tec29, 259.pdf](2011/Ads%20Sci%20Tec29,%20259.pdf)

Abstract: A modified two-step seeded polymerization was used for the preparation of porous mono-sized microspheres of poly(ethylene glycol dimethacrylate-co-1-vinylimidazole) [poly(EGDMA-co-VIM)] of 7 mu m in size. The specific surface area and the EGDMA/VIM molar ratio of the microspheres were determined as 64.5 m2/g and 1.5:1.0 mol/mol, respectively. The adsorption of Pb(II) ions from aqueous solution onto the porous mono-sized poly(EGDMA-co-VIM) microspheres was examined. The maximum adsorption capacities of the microspheres towards Pb(II) ions were determined as 21.74, 30.52, 49.23 and 56.48 mg/g at 293 K, 303 K, 318 K and 338 K, respectively. The dynamic and equilibrium adsorption behaviours of the system were adequately described by the pseudo-second-order kinetic model and the Langmuir isotherm, respectively. The apparent activation energy was determined as 6.212 kJ/mol, which is characteristic of a chemically controlled reaction. The values of E(fe) obtained from the Dubinin-Radushkevich equation in the non-linear form were 9.153 kJ/mol at 293 K, 10.34 kJ/mol at 303 K, 10.18 kJ/mol at 318 K and 10.91 kJ/mol at 333 K, thereby indicating that the adsorption of Pb(II) ions onto the porous mono-sized poly(EGDMA-co-VIM) microspheres occurred via a chemical process at all the temperatures studied. Various thermodynamic parameters, such as the Gibbs’ free energy change (ΔG0), the standard enthalpy change (ΔH0) and the standard entropy change (ΔS0) were also determined. The thermodynamic parameters obtained indicated that the adsorption process was endothermic in nature. These results demonstrate that the material studied could be used as a purifier for the removal of Pb(II) ions from water and wastewater.

Keywords: Adsorption, Aqueous Solution, Aqueous-Solutions, Beads, Bentonite, Cadmium(II), Copper(II) Ions, Equilibrium, Heavy-Metal Ions, Imidazole, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Isotherm, Nonlinear, Pb(II), Pb(II) Ions, Pseudo Second Order, Removal, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Wastewater, Water

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Full Text: [2011\Ads Sci Tec29, 289.pdf](2011/Ads%20Sci%20Tec29,%20289.pdf)

Abstract: The adsorption of Alizarin Red S (ARS) dye onto nano-sized silica modified with gamma-aminopropyltriethoxysilane (AMNS) was studied. The effects of the initial pH and concentration of the ARS solution, the AMNS dosage, the contact time and temperature on the removal and adsorption capacities have been investigated. The experimental isotherm data were analyzed using the Langmuir and Freundlich equations. The adsorption of ARS onto AMNS followed the Langmuir model, the maximum adsorption capacity being estimated as 200 mg/g. The application of three kinetic models, viz. pseudo-first-order, pseudo-second-order and intra-particle diffusion, to the experimental kinetic data was discussed. It was shown that the sorption processes were better fitted by the pseudo-second-order equation. From thermodynamic studies, the values of the Gibbs’ free energy (ΔG0), standard enthalpy change (ΔH0) and standard entropy change (ΔS0) were calculated as -3.78 kJ/mol, -90.05 kJ/mol and -289.34 J/(mol K), respectively, thereby indicating that the adsorption process was spontaneous and exothermic.

Keywords: Adsorbents, Adsorption, Aqueous-Solutions, Basic-Dyes, Congo-Red, Diffusion, Dye, Freundlich, Isotherm, Kinetic, Kinetic Models, Langmuir, Modified, Nanotubes, pH, Pseudo Second Order, Removal, Silica, Sorption, Temperature, Textile Effluents, Thermodynamic, Ultrafiltration

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Full Text: [2011\Ads Sci Tec29, 331.pdf](2011/Ads%20Sci%20Tec29,%20331.pdf)

Abstract: Date pits (DP) and sawdust (SD) were used as precursors for activated carbons which were prepared by steam pyrolysis of DP and chemical activation of SD, respectively. Surface characterization of both activated carbons was undertaken using the BET method. Adsorption of the radionuclides onto the activated carbon was studied as a function of shaking time, adsorbent mass and pH employing the batch technique. Such adsorption was strongly dependent on the pH of the aqueous medium in contact with the adsorbent, with the removal efficiency attaining a maximum at pH 6. The process was very fast initially, with maximum adsorption being attained within 180 min of initial contact. The adsorption rate could be best fitted by the pseudo-second-order kinetic model. The equilibrium data were analyzed using the Freundlich, Langmuir, Langmuir-Freundlich, Dubinin-Radushkevich, Temkin and Frumkin isotherms. The Langmuir-Freundlich and Frumkin equations were found to best represent the equilibrium data for both radionuclides. The isotherm model constants were determined and used to characterize the distribution of (60)Co and (134)Cs ions onto the adsorbent surfaces and to provide an insight into the affinity of the adsorbents towards these ions.

Keywords: Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Behavior, Aqueous-Solutions, Batch Technique, Cadmium, Carbon, Characterization, Dyes, Equilibrium, Freundlich, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Mechanisms, Models, pH, Pseudo Second Order, Radionuclides, Removal, Sawdust, Solids, Sorption

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Full Text: [2011\Ads Sci Tec29, 495.pdf](2011/Ads%20Sci%20Tec29,%20495.pdf)

Abstract: In this study, activated carbons were prepared from sewage sludge by chemical activation, and modified with pyrolusite as a catalyst during activation and carbonization. The influence of the addition of the mineral on the properties of the produced activated carbons was evaluated. The modified activated carbons exhibited BET surface areas which were 11.31% higher than ordinary sludge-based activated carbons and had larger pore volumes. The results of adsorption experiments showed that the pyrolusite-added adsorbents performed better towards the removal of Pb(II) ions than those without pyrolusite addition. At an initial pH of 5.4 for the Pb(II) ion solution, addition of the pyrolusite-added activated carbon led to the effective removal of Pb(II) ions with an adsorption capacity of ca. 70 mg/g. The adsorption capacity towards Pb(II) ion removal also increased with increasing contact time and adsorbent dosage. Compared to adsorbents derived from various other materials, the pyrolusite-modified adsorbent had a relatively high Pb(II) ion adsorption capacity. Adsorption isotherm and kinetics studies showed that the adsorption of Pb(II) ions onto the pyrolusite-modified adsorbent was well fitted by the Langmuir isotherm and could be described by the pseudo-second-order kinetic model.

Keywords: Activation, Adsorbent, Adsorbents, Adsorption, Adsorption Isotherm, Bet, Carbon, Coconut Shell, Cu(II), Equilibrium, Heavy-Metal Ions, Isotherm, Kinetic, Kinetics, Langmuir, Lead(II), Nanotubes, pH, Removal, Waste-Water

# Title: Adsorption from Solution

Jayson, G.G., Thompson, G., Hull, M. and Smith, A.L. (1983), Direct measurements of mixed sufactant concentrations at the gas-liquid interface and their realation to micellar compositions. *Adsorption from Solution*, (Edited by Ottewill, R.H., Rochester, C.H. and Smith, A.L.), Academic Press, London, New York, Paris, Sen Diego, San Francisco, São Paulo, Sydney, Tokyo and Toronto, 129-138.

Suder, B.J. and Wightman, J.P. (1983), Interaction of heavy metals with chitin and chitosan. II. cadmium and zinc. *Adsorption from Solution*, (Edited by Ottewill, R.H., Rochester, C.H. and Smith, A.L.), Academic Press, London, New York, Paris, Sen Diego, San Francisco, São Paulo, Sydney, Tokyo and Toronto, 235-244.

# Title: Adsorption, Surface Area and Porosity

Academic Press

? Gregg, S.J. and Sing, K.S.W. (1967), *Adsorption*, *Surface Area and Porosity*, Academic Press, New York.

# Title: Adsorption Technology for Air and Water Pollution Control

Lewis Publishers

Noll, K.E., Gounaris, V. and Hou, W.S. (1992), *Adsorption Technology for Air and Water Pollution Control*, Lewis Publishers, Michigan.

# Title: Adsorption Technology A Step-by-Step Approch to Process Evaluation and Application

Marcel Dekker, Inc.

Weber, Jr., W.J. (1985), Adsorption theory, concepts and models. in *Adsorption Technology A Step-by-Step Approch to Process Evaluation and Application*, (Edited by Slejko, F.L.), Marcel Dekker, Inc., New York and Basel, 1-35.

Bernardin, Jr., F.E. (1985), Experimental design and testing of adsorption and adsorbates. in *Adsorption Technology A Step-by-Step Approch to Process Evaluation and Application*, (Edited by Slejko, F.L.), Marcel Dekker, Inc., New York and Basel, 37-90.

# Title: Adult Education Quarterly

Full Journal Title: Adult Education Quarterly

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Rachal, J.R. and Sargent, S.F. (1995), Publication productivity of North-American institutions in selected adult-education journals, 1983-1992. *Adult Education Quarterly*, **45** (2), 63-78.

Full Text: [1995\Adu Edu Qua45, 63.pdf](1995/Adu%20Edu%20Qua45,%2063.pdf)

Abstract: Although publication productivity studies have been conducted in several other disciplines, no previous research has specifically examined institutional productivity in the field of adult education. The Commission of Professors of Adult Education was surveyed to determine the top journals in the field. The five journals emerging from the survey were each examined issue by issue for the ten-year period 1983-1992 to determine institutional affiliation of contributing authors. Institutional rankings for the composite five journals for the total period and each of the two five-year periods were determined by awarding credit to the authors’ institutions based on authorship order. Separate productivity rankings were determined for Adult Education Quarterly alone. In the composite of the five journals, Northern Illinois, British Columbia and Georgia (tie), Pennsylvania State, and Rutgers were the top five most productive institutions for the overall ten-year period on this one measure of program quality.

Keywords: Adult, Affiliation, Authors, Authorship, Education, Institutions, Journals, Productivity, Professors, Psychological-Association, Publication, Publication Productivity, Quality, Rankings, Research, Survey

? Mott, V.W. (2011), My word! Plagiarism and college culture. *Adult Education Quarterly*, **61** (2), 201-203.

Full Text: [2011\Adu Edu Qua61, 201.pdf](2011/Adu%20Edu%20Qua61,%20201.pdf)

Keywords: Plagiarism

# Title: Advanced in Catalysis

Full Journal Title: Advanced in Catalysis

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Halsey, G.D. (1952), *Advanced in Catalysis*, Vol. 4, (Edited by Frankenburg, W.G., Komarewski, V.I. and Rideal, E.K.), Academic Press, New York, 259.

# Title: Advanced Drug Delivery Reviews

Full Journal Title: [Advanced Drug Delivery Reviews](http://www.sciencedirect.com/science/journal/0169409X)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mayes, A.G. and Whitcombe, M.J. (2005), Synthetic strategies for the generation of molecularly imprinted organic polymers. *Advanced Drug Delivery Reviews*, **57** (12), 1742-1778.

Full Text: [2005\Adv Dru Del Rev57, 1742.pdf](2005/Adv%20Dru%20Del%20Rev57,%201742.pdf)

Abstract: Molecular imprinting is a method of inducing molecular recognition properties in synthetic polymers in response to the presence of a template species during formation of the three-dimensional structure of the polymer. The molecularly imprinted polymers (MIPs) prepared in this way have been termed “plastic antibodies” and combine the robustness of the polymer scaffold with binding properties more readily associated with biological receptors. smart polymers of this type may find applications in drug delivery, controlled release and monitoring of drug and metabolite concentrations. In this review the main synthetic strategies used in the preparation of imprinted organic polymers are described in terms of the chemical principles used in the templating step. These are illustrated with examples taken from the literature and are classified as covalent, semi-covalent, non-covalent, metal-mediated and non-polar. Finally strategies for the selection of monomers optimisation and modification of the properties of imprinted polymers are reviewed. (c) 2005 Elsevier B.V. All rights reserved.

Keywords: Functional Monomer, Cross-Linker, Self-Assembly, Artificial Antibodies, Affinity Separation, Nanoparticles, Targeted Delivery, Combinatorial Methods, Chemometrics, Molecular Modelling Solid-Phase Extraction, Analogue Built Polymers, Building Fluorescent Sensors, Amino-Acid Derivatives, Opening Metathesis Polymerization, Performance Liquid-Chromatography, Surface Template Polymerization, Substrate-Selective Polymers, Synthesized Vinyl-Polymers, High-Throughput Synthesis

# Title: Advanced Engineering Materials

Full Journal Title: [Advanced Engineering Materials](http://www3.interscience.wiley.com/journal/67500980/toc)

ISO Abbrev. Title: Adv. Eng. Mater.

JCR Abbrev. Title: Adv Eng Mater

ISSN: 1438-1656

Issues/Year: 12

Language: English

Journal Country/Territory: Germany

Publisher: Wiley-V C H Verlag Gmbh

Publisher Address: Po Box 10 11 61, D-69451 Weinheim, Germany

Subject Categories:

Materials Science, Multidisciplinary: Impact Factor 1.761, 61/212 (2009)

? (2001), AEM top-articles. *Advanced Engineering Materials*, **3** (12), 944

Full Text: Adv Eng Mat3, 944.pdf

? (2002), AEM top-articles 2002. *Advanced Engineering Materials*, **4** (9), 650

Full Text: Adv Eng Mat4, 650.pdf

Arurault, L. and Bes, R.S. (2003), Kinetics of metallic electrochemical impregnation of porous anodic oxidation layer of 1050 and 2024 aluminium alloys. *Advanced Engineering Materials*, **5** (6), 433-435.

Full Text: [A\Adv Eng Mat5, 433.pdf](A/Adv%20Eng%20Mat5,%20433.pdf)

Keywords: Aluminium Alloys, Anodization, Electrochemical Methods, Impregnation, Kinetics

? (2003), Top articles 2003. *Advanced Engineering Materials*, **5** (8), 537

Full Text: Adv Eng Mat5, 537.pdf

Keywords: articles

? (2005), Top articles 2005. *Advanced Engineering Materials*, **7** (10), 874

Full Text: Adv Eng Mat7, 874.pdf

Keywords: articles

# Title: Advanced Functional Materials

Full Journal Title: Advanced Functional Materials

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Yu, J.G., Su, Y.R. and Cheng, B. (2007), Template-free fabrication and enhanced photocatalytic activity of hierarchical macro-/mesoporous titania. *Advanced Functional Materials*, **17** (12), 1984-1990.

Full Text: [2007\Adv Fun Mat17, 1984.pdf](2007/Adv%20Fun%20Mat17,%201984.pdf)

Abstract: Hierarchical macro-/mesoporous titania is prepared without the addition of templates or auxiliary additives at room temperature by the simple dropwise addition of tetrabutyl titanate to pure water, and then calcined at various temperatures. The products are characterized by X-ray diffraction, N-2-adsorption-desorption analysis, scanning electron microscopy, and the corresponding photocatalytic activity is evaluated by measuring the photocatalytic oxidation of acetone in air. The results reveal that hierarchical macro-/mesoporous structures of titania can spontaneously form by self-assembly in alkoxide-water solutions in the absence of organic templates or auxiliary additives. The calcination temperature has a strong effect on the structures and photocatalytic activity of the prepared titania. At 300 degrees C, the calcined sample shows the highest photocatalytic activity. At 400 and 500 degrees C, the photocatalytic activity slightly decreases. When the calcination temperature is higher than 500 degrees C, the photocatalytic activity greatly decreases because of the destruction of the hierarchical macro-/mesoporous structure of the titania and the drastic decrease of specific surface area. The hierarchically macro-/mesostructured titania network with open and accessible pores is well-preserved after calcination at 500 degrees C, indicating especially high thermal stability. The macroporous channel structures are even preserved after calcination at 800 degrees C. This hierarchical macro-/mesostructured titania is significant because of its potential applications in photocatalysis, catalysis, solar-cell, separation, and purification processes.

Keywords: Surfactant-Assisted Synthesis, TiO2 Powders, Calcination Temperature, Mesoporous Titania, Inorganic Oxides, Thin-Films, Silica, Microstructures, Mineralization, Composites

# Title: Advanced Inorganic Chemistry

Cotton, F.A. and Wilkinson, G. (1988), *Advanced inorganic Chemistry*, John Wiley & Sons, New York, 1385-1388.

# Title: Advanced Materials

Full Journal Title: [Advanced Materials](http://www3.interscience.wiley.com/journal/10008336/toc); [Advanced Materials](http://www3.interscience.wiley.com/cgi-bin/jhome/109614369)

ISO Abbreviated Title: Adv. Mater.

JCR Abbreviated Title: Adv Mater

ISSN: 0935-9648

Issues/Year: 24

Journal Country/Territory: United States

Language: English

Publisher: Wiley-V C H Verlag Gmbh

Publisher Address: PO BOX 10 11 61, D-69451 Berlin, Germany

Subject Categories:

Materials Science, Multidisciplinary: Impact Factor

? Gregory, P. (1996), The impact of interdisciplinary materials science. *Advanced Materials*, **8** (3), 201-202.

Full Text: [1996\Adv Mat8, 201.pdf](1996/Adv%20Mat8,%20201.pdf)

Abstract: Essay: How “hot” is published research? The Institute of Scientific Information (ISI), an independent organization from the USA, follows the citation behavior of scientists on a regular basis. Which journals do they cite? How often? Which journals are cited the most? Which papers in which journals are cited immediately on publication? The ISI has recently published its evaluation for 1994. The performance of Advanced Materials is discussed.

? Tamai, H., Ikeuchi, M., Kojima, S. and Yasuda, H. (1997), Extremely large mesoporous carbon fibers synthesized by the addition of rare earth metal complexes and their unique adsorption behaviors. *Advanced Materials*, **9** (1), 55-58.

Full Text: [1997\Adv Mat9, 55.pdf](1997/Adv%20Mat9,%2055.pdf)

Abstract: Extremely highly mesoporous activated carbon fibers (see Figure) have been synthesized for the first time from pitch fibers containing rare earth metal complexes. These fibers have potential applications in the purification of drinking water, for example, owing to their ability to absorb giant molecules such as humic acid. Investigations of the absorption behavior of the fibers are reported.

Keywords: Diffraction

Notes: highly cited

? Zhang, X. and Shen, J.C. (1999), Self-assembled ultrathin films: From layered nanoarchitectures to functional assemblies. *Advanced Materials*, **11** (13), 1139-1143.

Full Text: [1999\Adv Mat11, 1139.pdf](1999/Adv%20Mat11,%201139.pdf)

Abstract: Functional devices through self-assembly is the goal of the research presented here. Recent progress in the self-assembly of ultrathin films into layered nanoarchitectures and functional assemblies, such as the chemically modified electrode shown in the Figure, is concentrated on. Other devices examined include enzyme sensors and light-emitting diodes.

Keywords: Molecular Deposition, Electrostatic Interaction, Cobalt Phthalocyanine, Amphiphilic Polymer, Multilayer Films, Fabrication, Nanoparticles, Monolayers, Adsorption, Buildup

Hossain, K.Z. and Mercier, L. (2002), Intraframework metal ion adsorption in ligand-functionalized mesoporous silica. *Advanced Materials*, **14** (15), 1053-1056.

Full Text: [A\Adv Mat14, 1053.pdf](A/Adv%20Mat14,%201053.pdf)

Keywords: Mesoporous Silica, Metal Ion Adsorption, Nanoporous Materials, Organosilanes

Notes: highly cited

? Xia, Y.N., Yang, P.D., Sun, Y.G., Wu, Y.Y., Mayers, B., Gates, B., Yin, Y.D., Kim, F. and Yan, Y.Q. (2003), One-dimensional nanostructures: Synthesis, characterization, and applications. *Advanced Materials*, **15** (5), 353-389.

Full Text: [2003\Adv Mat15, 353.pdf](2003/Adv%20Mat15,%20353.pdf)

Abstract: This article provides a comprehensive review of current research activities that concentrate on one-dimensional (1D) nanostructures-wires, rods, belts, and tubes-whose lateral dimensions fall anywhere in the range of 1 to 100 rim. We devote the most attention to 1D nanostructures that have been synthesized in relatively copious quantities using chemical methods. We begin this article with an overview of synthetic strategies that have been exploited to achieve 1D growth. We then elaborate on these approaches in the following four sections: i) anisotropic growth dictated by the crystallographic structure of a solid material; ii) anisotropic growth confined and directed by various templates; iii) anisotropic growth kinetically controlled by supersaturation or through the use of an appropriate capping reagent, and iv) new concepts not yet fully demonstrated, but with long-term potential in generating 1D nanostructures. Following is a discussion of techniques for generating various types of important heterostructured nanowires. By the end of this article, we highlight a range of unique properties (e.g., thermal, mechanical, electronic, optoelectronic, optical, nonlinear optical, and field emission) associated with different types of 1D nanostructures. We also briefly discuss a number of methods potentially useful for assembling 1D nanostructures into functional devices based on crossbar junctions, and complex architectures such as 2D and 3D periodic lattices. We conclude this review with personal perspectives on the directions towards which future research on this new class of nanostructured materials might be directed.

Keywords: Complex, Compound Semiconductor Nanowires, Gallium Nitride Nanowires, Indium-Phosphide Nanowires, Large-Scale Synthesis, Research, Scanning Force Microscopy, Shape-Controlled Synthesis, Single-Crystal Nanowires, Uniform Silver Nanowires, Walled Carbon Nanotubes, Zinc-Oxide Nanowires

Notes: highly cited

? Seayad, A.M. and Antonelli, D.M. (2004), Recent advances in hydrogen storage in metal-containing inorganic nanostructures and related materials. *Advanced Materials*, **16** (9-10), 765-777.

Full Text: [2004\Adv Mat16, 765.pdf](2004/Adv%20Mat16,%20765.pdf)

Abstract: An overview of recent advances in the application of non-carbonaceous nanostructured and composite materials in hydrogen storage is presented in this review. The main focus is on complex hydrides, non-graphitic nanotubes, and other porous composite and framework materials since carbon nanotubes have been the subject of numerous other reviews. Recent advances in the area of alanates show a promising reversible absorption capability of up to 5%, closing in on the projected Department of Energy (DOE) target of 6%. Non-carbon nanotubes mainly showed a sorption capacity of 1-3 wt.-%, although a promising level of 4.2 wt.-% is shown by boron nitride nanotubes after collapse of their walls. Other interesting materials included here are lithium nitride and porous metallo-organic frameworks.

Keywords: Boron-Nitride Nanotubes, Catalyzed Alanates, Desorption-Kinetics, Magnesium Alanate, Mesoporous Titanium-Oxide, Room-Temperature, Sodium Aluminum-Hydride, Sonochemical Synthesis, Sorption, Walled Carbon Nanotubes, X-Ray-Diffraction

# Title: Advanced Materials & Processes

Full Journal Title: Advanced Materials & Processes

ISO Abbreviated Title: Adv. Mater. Process.

JCR Abbreviated Title: Adv Mater Process

ISSN: 0026-0665

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Asm International

Publisher Address: Subscriptions Specialist Customer Service, Materials Park, OH 44073-0002

Subject Categories:

Materials Science: Impact Factor

Scott, Jr., W.W. (1991), Responsible care. *Advanced Materials & Processes*, **140** (3), 4.

Bhat, D.G. (1991), Responsible care advocate. *Advanced Materials & Processes*, **140** (6), 54.

# Title: Advanced Materials Research

Full Journal Title: Advanced Materials Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Liu, S.Y., Gao, J., Xu, Y.Y., Lu, C.W. and Yang, Y.J. (2011), Preparation of steel slag adsorbent and its removal phenol property. *Advanced Materials Research*, **213**, 460-464.

Full Text: 2011\Adv Mat Res213, 460.pdf

Abstract: Steel slag is a industry solid waste which come from steel making factory, and is easy to solid-liquid separation, so it posses some adsorption capacities and can be used as adsorbent. Adsorption phenol onto steel slag was investigated by the oscillating adsorption experiments and the effect of different operating parameters on these adsorption processes, such as initial concentration phenol and the pH value were studied. The surface characterization were gained by SEM, X-ray diffraction, IR Spectroscopy and BET.

Keywords: Activated Carbon, Adsorption, Adsorption, Aqueous-Solutions, Heterogeneity, Industry, pH, pH Value, Phenol, Preparation, Steel Slag

# Title: Advanced Powder Technology

Full Journal Title: [Advanced Powder Technology](http://www.sciencedirect.com/science/journal/09218831)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0921-8831

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Sano, N., Kinugasa, M., Otsuki, F. and Suehiro, J. (2007), Gas sensor using single-wall carbon nanohorns. *Advanced Powder Technology*, **18** (4), 455-466.

Full Text: [2007\Adv Pow Tec18, 455.pdf](2007/Adv%20Pow%20Tec18,%20455.pdf)

Abstract: We fabricated a gas sensor using single-walled carbon nanohorns (SWNHs) produced by the gas-injected arc-in-water method. This gas sensor consisted of agglomerated SWNHs as a coating film between Al electrodes on a glass substrate and the shift of the electric resistance of this coating film caused by gas adsorption was monitored. Its sensing property was examined for the detection of NH3 and O3 at room temperature. It was confirmed that the electrical resistance of the SWNHs film increases with adsorption of NH3, whereas the adsorption of O3 induced the decrease of the resistance. A model to correlate the gas concentration and the sensing property was proposed focusing on the detection of NH3 based on mono-layer adsorption and a second-order interaction of adsorbed gas molecules for charge transfer.

Keywords: Adsorption, Arc, Arc Discharge, Carbon, Carbon Nanohorns, Charge, Charge Transfer, Coating, Concentration, Dielectrophoresis, Electrical Resistance, Fabrication, Film, Gas Adsorption, Gas Sensor, Glass, Interaction, Model, Monolayer, Nanotubes, NH3, O3, Open-Air, Resistance, Room Temperature, Scale, Second Order, Sensor, Substrate, Temperature, Transfer

# Title: Advanced Powder Technology III Materials Science Forum

Full Journal Title: Advanced Powder Technology III Materials Science Forum

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0255-5476

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Trans Tech Publications Ltd, Zurich-Uetikon

Publisher Address:

Subject Categories:

: Impact Factor

? Jose, C.L.V., Diaz, F.R.V. and Buchle, P.M. (2003), Characterization and adsorption of phenol by organophilic clays. *Advanced Powder Technology III Materials Science Forum*, **416** (4), 550-554.

Abstract: Nowadays, increasing concern about pollution of groundwater by organic chemicals led to research on the use of various adsorbents. They can be applied to provide a barrier to the escape of organic contaminants from storage tanks and stabilization lagoons. This study investigated, experimentally, the adsorption of phenol by six organoclays, using phenol in aqueous solution. This is the way that wastewater is discharged.

The organoclays were prepared with two different clays, a bentonite from the Brazilian State of Paraiba (SVC), sodium exchanged in laboratory and a Wyoming, bentonite (SWy) with three Brazilian quaternary ammonium salts. The cations exchanged were dialkyl dimethyl with the alkyls groups dodecyl (DADM), distearyl dimethyl (DSDM) and octadecyl trimethyl (ODTM). Through this technique the hydrophilic character is transformed into hydrophobic.

Adsorption of phenol followed the order of ODTM-SVC > DADM-SVC > DSDM-SVC > DADM-SWy > DSDM-SWy > ODTM-SWy.

Isotherms for DSDM-SVC, DSDM-SWy, DADM-SVC, DADMA-SWy, ODTM-SVC and ODTM-SWy followed a convex up pattern.

The equilibrium curves obtained are well represented by the Freundlich isotherm model. The adsorption data showed that the prepared materials were effective to adsorb phenol, being the Brazilian clay the most efficient of the three materials.

Keywords: Adsorption, Phenol, Organoclays, Sinectite, Bentonite, Sorption

# Title: Advanced Science Letters

Full Journal Title: Advanced Science Letters

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Manocha, L.M., Disher, I.A. and Manocha, S. (2011), Sorption of cadmium ions on (AB-type) carbonated hydroxyapatite nanoparticles. *Advanced Science Letters*, **4** (1), 44-50.

Full Text: [2011\Adv Sci Let4, 44.pdf](2011/Adv%20Sci%20Let4,%2044.pdf)

Abstract: Well crystalline carbonated hydroxyapatite nanoparticles with particle size smaller than 50 nm have been prepared using sol gel method. Cadmium ions removal property of these nanoparticles has been investigated using batch sorption experiments performed at a constant temperature of 20ºC from Cd aqueous solution with varying concentrations from 20 ppm to 400 ppm. The experimental isotherm data were found to agree with Langmuir model with maximum sorption capacity of similar to 71.43 mg/g indicating very strong sorption capacity for carbonated hydroxyapatite nanoparticles to remove Cd ions in low and high initial concentrations. The pseudo-second-order model presents the best agreement with the experimental data and internal diffusion does not control the kinetic which can be represented by a rapid cadmium sorption stage up to the equilibrium. The ion exchange was found to be the predominant mechanism in Cd ions sorption by carbonated hydroxyapatite nanoparticles while surface coverage has secondary role in the sorption process.

Keywords: Adsorption, Apatites, Cadmium, Cadmium Sorption, Calcium, Carbonated Hydroxyapatite, Eco Materials, Equilibrium, Hydroxyapatite, Hydroxyapatite Nanoparticles, Immobilization, Ion-Exchange, Isotherm, Kinetic, Langmuir, Poly(vinyl alcohol), Hydroxyapatite Cryogels, Sorption, Strontium, Substitution, Waste Water

# Title: Advances in Adsorption Separation Science and Technology

Yang, R.T., Kikkinides, E.S., Foldes, R., Chen, N., Hutson, N.D. and Padin, J. (1997), New adsorbent materials. in *Advances in Adsorption Separation Science and Technology*, (Edited by Zhong, L. and Zhenhua, Y.), The Proceedings of the Fourth China-Japan-USA Symposium on Advanced Adsorption Separation Science and Technology, May 13~16, 1997, Guangzhou, China, South China University of Technology Press, Guangzhou, 14-18.

Ho, Y.S. and McKay, G. (1997), Pseudo kinetic model for sorption processes. in *Advances in Adsorption Separation Science and Technology*, (Edited by Zhong, L. and Zhenhua, Y.), The Proceedings of the Fourth China-Japan-USA Symposium on Advanced Adsorption Separation Science and Technology, May 13~16, 1997, Guangzhou, China, South China University of Technology Press, Guangzhou, 257-263.

# Title: Advances in Agronomy

Full Journal Title: Advances in Agronomy

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0065-2113

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Wagner, G.J. (1993), Accumulation of cadmium in crop plants and its consequences to human health. *Advances in Agronomy*, **51**, 173-212.

Keywords: Metal Binding Phytochelatins, Nicotiana-Tabacum-L, Heavy-Metals, Schizosaccharomyces-Pombe, Fission Yeast, Mammalian Metallothionein, Simulated Evaluation, Possible Mechanisms, Transgenic Tobacco, Escherichia-Coli

Notes: highly cited

? Xu, S.H., Sheng, G.Y. and Boyd, S.A. (1997), Use of organoclays in pollution abatement. *Advances in Agronomy*, **59**, 25-62

Keywords: Cationic Surfactant Adsorption, Clay, Hydrophobic Organic-Compounds, Layer Silicates, Selectivity, Soil, Sorption Kinetics, Tetramethylammonium-Smectite, Transport, Water

# Title: Advances in Atmospheric Sciences

Full Journal Title: [Advances in Atmospheric Sciences](http://www.springerlink.com/content/119821/?p=0a918f17398345d4b28a8fe84cb48311&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Wu, G.X., Wang, H.J. and Zhang, D.L. (2008), Advances in atmospheric sciences: A featured journal from Essential Science Indicators (reprinted from ScienceWatch.com). *Advances in Atmospheric Sciences*, **25** (5), 705-708.

Full Text: [2008\Adv Atm Sci25, 705.pdf](2008/Adv%20Atm%20Sci25,%20705.pdf)

Keywords: Air Chemistry, Article Downloads, Atmospheric Sciences, Chinese Journals, Climate Dynamics, Indicators, Journal, Marine Meteorology, Meteorology-Associated Geophysics, Publisher Collaborations, Remote Sensing, Satellite Meteorology, Science, Weather Systems

? Shi, A.L. and Leydesdorff, L. (2011), What do the cited and citing environments reveal about advances in atmospheric physics? *Advances in Atmospheric Sciences*, **28** (1), 238-244.

Full Text: [2011\Adv Atm Sci28, 238.pdf](2011/Adv%20Atm%20Sci28,%20238.pdf)

Abstract: The networking status of journals reflects their academic influence among peer journals. This paper analyzes the cited and citing environments of this journal, Advances in Atmospheric Sciences (Adv. Atmos. Sci.), using methods from social network analysis. Since its initial publication, Adv. Atmos. Sci. has been actively participating in the international journal environment and international journals are frequently cited in Adv. Atmos. Sci. Particularly, this journal is intensely interrelated with its international peer journals in terms of their similar citing patterns. The international influence of Adv. Atmos. Sci. is comparatively bigger than other Chinese SCI journals in atmospheric sciences as reflected by total cites to Adv. Atmos. Sci. and the total number of international journals citing it. The academic visibility of Adv. Atmos. Sci. is continuing to improve in the international research community as the number of reference citation it receives in its peer journals internationally increases over time.

Keywords: Advances in Atmospheric Sciences, Chinese Journal, Citation, Cited Environment, Citing Environment, Environment, Exercise, Journal, Journal Networking, Journals, Publication, Research, SCI, Scientific Journals, Social Network Analysis, Visibility

# Title: Advances in Classification Research

Full Journal Title: Advances in Classification Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ruiz, M.E. and Srinivasan, P. (1998), Automatic text categorization using neural networks. *Advances in Classification Research*, **8**, 59-72.

Full Text: [1998\Adv Cla Res8, 59.pdf](1998/Adv%20Cla%20Res8,%2059.pdf)

Abstract: This paper presents the results obtained from a series of experiments in automatic text categorization of MEDLINE articles. The main goal of this research is to build neural networks and to train them in assigning MeSH phrases based on term frequency of single words from title and abstract. The experiments compare the performance of a counterpropagation network against a backpropagation neural network. Results obtained by using a set of 2,344 MEDLINE documents are presented and discussed.

Keywords: Classification, Medline, Research, Retrieval

# Title: Advances in Climate Change Research

Full Journal Title: [Advances in Climate Change Research](http://www.climatechange.cn/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

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Subject Categories:

: Impact Factor

? Li, S.S., Hong, S. and Liu, X.J. (2011), World climate change research trends. *Advances in Climate Change Research*, **7** (1), 73-76.

Full Text: [2011\Adv Cli Cha Res7, 73.pdf](2011/Adv%20Cli%20Cha%20Res7,%2073.pdf)

# Title: Advances in Complex Systems

Full Journal Title: Advances in Complex Systems

ISO Abbreviated Title:

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ISSN:

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Journal Country/Territory:

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? Krapivin, M., Marchese, M. and Casati, F. (2010), Exploring and understanding citation-based scientific metrics. *Advances in Complex Systems*, **13** (1), 59-81.

Full Text: [2010\Adv Com Sys13, 59.pdf](2010/Adv%20Com%20Sys13,%2059.pdf)

Abstract: This paper explores citation-based metrics, how they differ in ranking papers and authors, and why. We initially take as example three main metrics that we believe significant; the standard citation count, the more and more popular h-index, and a variation we propose of PageRank applied to papers (called PaperRank), that is appealing as it mirrors proven and successful algorithms for ranking web pages. As part of analyzing them, we develop generally applicable techniques and metrics for qualitatively and quantitatively analyzing indexes that evaluate content and people, as well as for understanding the causes of their different behaviors. Finally, we extend the analysis to other popular indexes, to show whether the choice of the index has a significant effect in how papers and authors are ranked. We put the techniques at work on a dataset of over 260 K ACM papers, and discovered that the difference in ranking results is indeed very significant (even when restricting to citation-based indexes), with half of the top-ranked papers differing in a typical 20-element long search result page for papers on a given topic, and with the top researcher being ranked differently over half of the times in an average job posting with 100 applicants.

Keywords: Citation, Citation Analyses, Citation Count, h Index, h-Index, Metrics, Pagerank, Scientometrics, Techniques, Topic, Web Pages

# Title: Advances in Cancer Research

Full Journal Title: [Advances in Cancer Research](http://www.sciencedirect.com./science/bookseries/0065230X)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0065-230X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Miller, J.A. and Miller, E.C. (1953), The carcinogenic aminoazo dyes. *Advances in Cancer Research*, **1**, 339-396.

Full Text: [-1959\Adv Can Res1, 339.pdf](-1959/Adv%20Can%20Res1,%20339.pdf)

# Title: Advances in Catalysis

Full Journal Title: [Advances in Catalysis](http://www.sciencedirect.com/science/bookseries/03600564)

ISO Abbreviated Title:

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ISSN: 0360-0564

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Hill, T.L. (1952), Theory of physical adsorption. *Advances in Catalysis*, **4**, 211-258.

Full Text: [-1959\Adv Cat4, 211-1.pdf](-1959/Adv%20Cat4,%20211-1.pdf); [-1959\Adv Cat4, 211.pdf](-1959/Adv%20Cat4,%20211.pdf)

Notes: highly cited

? Cranston, R.W. and Inkley, F.A. (1957), The determination of pore structures from nitrogen adsorption isotherms. *Advances in Catalysis*, **9**, 143-154.

Full Text: [-1959\Adv Cat9, 143.pdf](-1959/Adv%20Cat9,%20143.pdf)

Abstract: An improved method of deriving pore-size distributions from adsorption isotherms is described which is also believed to provide information on pore shapes. The theory is similar in principle to that of Barrett, Joyner, and Halenda @), but the method of calculation i s more precise. The method provides an estimate of surface area almost independent of the B.E.T. value, and the two values have been compared for a large number of materials including aluminas, silica-aluminas, silicas, and clays. It is shown that the surface area distribution should generally be derived from the adsorption branch of the isotherm and that the above comparison then provides a measure of the validity of the physical assumptions, and hence gives an indication of the character of the pores.

Keywords: Adsorption

Notes: highly cited

? Hammer, B. and Nørskov, J.K. (2000), Theoretical surface science and catalysis - Calculations and concepts. *Advances in Catalysis*, **45**, 71-129.

Full Text: [2000\Adv Cat45, 71.pdf](2000/Adv%20Cat45,%2071.pdf)

Keywords: Density-Functional Theory, Potential-Energy Surface, Single-Crystal Surfaces, Generalized Gradient Approximation, Transmission Electron-Microscopy, Adsorbate-Adsorbate Interactions, 6-Dimensional Quantum Dynamics, Transition-Metal Surfaces, Core-Level Shifts, Dissociative Adsorption

# Title: Advances in Catalysis and Related Subjects

(Advan. Catal. Relat. Subj.)

Full Journal Title: Advances in Catalysis and Related Subjects

ISO Abbreviated Title:

JCR Abbreviated Title: Advan Chem Ser

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Aharoni, C. and Tompkins, F.C. (1970), Kinetics of adsorption and desorption and the Elovich equation. In *Advances in Catalysis and Related Subjects*, (Edited by Eley, D.D., Pines, H. and Weisz, P.B.), Academic Press, New York, **21**, 1-49.

# Title: Advances in Chemistry Series

Full Journal Title: [Advances in Chemistry Series](http://pubs.acs.org/series/advances)

ISO Abbreviated Title:

JCR Abbreviated Title: Advan Chem Ser

ISSN: 0065-2393

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Smith, J.M. (1968), Kinetics of adsorption. *Advances in Chemistry Series*, **79**, 8-22.

Abstract: The effects of physical transport processes on the overall adsorption on porous solids are discussed. Quantitative models are presented by which these effects can be taken into account in designing adsorption equipment or in interpreting observed data. Intraparticle processes are often of major importance in adsorption kinetics, particularly for liquid systems. The diffusivities which describe intra-particle transfer are complex, even for gaseous adsorbates. More than a single rate coefficient is commonly necessary to represent correctly the mass transfer in the interior of the adsorbent.

? Hahn, H.H. and Stumm, W. (1968), Coagulation by Al(III) - role of adsorption of hydrolyzed aluminum in kinetics of coagulation. *Advances in Chemistry Series*, **79**, 91-111.

Abstract: The kinetics of coagulation have been studied for systems of silica dispersions destabilized by hydrolyzed Al(III). The rate of agglomeration is a function of (1) the collision frequency which is determined by physical parameters such as colloid size and concentration and velocity gradients in the medium; and (2) of the collision efficiency factor which reflects the stability of the colloid. This relative stability has been determined as a function of chemical solution parameters such as pH and the ratio of coagulant concentration and surface concentration of the dispersed phase. The destabilization of silica dispersions results from specific adsorption of positively charged hydroxo aluminum complexes onto the negatively charged colloid surface causing a decrease and ultimately a reversal of sign of the surface potential.

? Vandolse, K.M. and Vold, M.J. (1968), Analysis of composite isotherm for adsorption of a strong electrolyte from its aqueous solution onto a solid. *Advances in Chemistry Series*, **79**, 145-160.

Abstract: The charge density, Volta potential, etc., are calculated for the diffuse double layer formed by adsorption of a strong 1:1 electrolyte from aqueous solution onto solid particles. The experimental isotherm can be resolved into individual isotherms without the common monolayer assumption. That for the electrolyte permits relating Guggenheim-Adam surface excess, double layer properties, and equilibrium concentrations. The ratio: σo/Γ2N declines from two at “zero” potential toward unity with rising potential. Unity is closely reached near kT/e = 10 for spheres of 1000 A. radius but is still about 1.3 for plates. In dispersions of Sterling FTG in aqueous sodium β-naphthalene sulfonate a maximum potential of kT/e = 7 (170 mv.) is reached at 4 X 10-3M electrolyte. The results are useful in interpretation of the stability of the dispersions.

? Dubinin, M.M. and Astakhov, V.A. (1971), Description of adsorption equilibria of vapors on zeolites over wide ranges of temperature and pressure. *Advances in Chemistry Series*, **102**, 69-85.

Abstract: The distinguishing feature of zeolites as microporous adsorbents is the presence of cations in the micropores. These cations are centers for the adsorption of molecules with a nonuniform electron density distribution. An attempt has been made to develop the theory of volume filling of micropores for approximate description of adsorption equilibria of vapors on zeolites over wide temperature ranges. An adsorption equation has been obtained which takes into consideration, in the general case, both dispersion forces and the forces of interaction of molecules with ions. This equation describes adsorption on the active centers and the filling of the remainder of the adsorption space of the voids after the blocking of the active centers. Several examples of agreement between the results of calculation and experimental data are given.

? Eagan, J.D., Kindl, B. and Anderson, R.B. (1971), Kinetics of adsorption on A-zeolites: Temperature effects. *Advances in Chemistry Series*, **102**, 164-170.

Abstract: Maximum temperatures measured in the adsorbent the adsorption of nitrogen on 4A and propane on 5A zeolite, both at —78°C, were 15° and 50°C above the bath temperature. Finite difference calculations, taking into account generation and loss of heat and changes in diffusivity equilibrium adsorption with temperature, reproduced pertinent features of the rate and temperature data. When the temperature maximum occurs late in the adsorption process, the rate curve is drastically different from expected for isothermal adsorption.

? Alben, K., Belfort, G., Benedek, A., Frick, B.R., Mcginnis, F.K., Pirbazari, M., Rosene, M.R., Shpirt, E., Tien, C. and Weber, Jr., W.J. (1983), Treatment of water by granular activated carbon - discussion-II - Modeling and competitive adsorption aspects. *Advances in Chemistry Series*, **202**, 269-276.

? Flagan, R.C. (1993), Probing the chemical-dynamics of aerosols. *Advances in Chemistry Series*, **232**, 185-210.

Abstract: Atmospheric aerosols are complex mixtures of particles emitted into the atmosphere and secondary particles formed as a result of gas-phase chemical reactions. Secondary aerosols are formed by condensation of the products of gas-phase reactions onto particle surfaces or by homogeneous nucleation. Particle formation and growth are often very rapid, this rapidity places severe demands on the instrumentation used to monitor the aerosol evolution. These demands are particularly evident in smog chamber studies that are designed to elucidate the fundamental processes that take place in the atmosphere. Many reacting system produce several condensible species; this situation further complicates the analysis of aerosol formation and growth. This chapter reviews the present aerosol instrumentation available and gives results from smog chamber studies, showing some of the recent advances that are helping further the understanding of atmospheric aerosol chemical dynamics. Examples from smog chamber studies are used to illustrate needed improvements in instrumentation for following the evolution of the composition and size distributions of atmospheric aerosols.

Keywords: Particle-Size, Mass-Spectrometry, Fly-Ash, Condensation, Photooxidation, Distributions, Evaporation, Instruments, Inversion, Impactor

# Title: Advances in Colloid and Interface Science

Full Journal Title: [Advances in Colloid and Interface Science](http://www.sciencedirect.com/science/journal/00018686)

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Subject Categories:

Chemistry, Physical: Impact Factor 5.333, 13/113 (2008); Impact Factor 5.675, 11/121 (2009); Impact Factor 8.660, 9/127 (2010)

Notes: highly cited

Jaroniec, M. (1983), Physical adsorption on heterogeneous solids. *Advances in Colloid and Interface Science*, **18** (3-4), 149-225.

Full Text: [A\Adv Col Int Sci18, 149.pdf](A/Adv%20Col%20Int%20Sci18,%20149.pdf)

Abstract: A unified approach to physica adsorption of heterogeneous solids is presented. In the case of single-gas adsorption the overall adsorption isotherms, derived by solving the fundamental integral equation for Langmuir’s local isotherm and different energy distributions, are discussed. These isotherm equations are extended for Fowler-Gugaenheim and BET local adsorption isotherms. Moreover, the overall isotherms for single-gas adsorption are generalized for mixed-gas adsorption, adsorption from solutions of non-electrolytes and multi-solute adsorption from dilute solutions. The last section of this paper is devoted to the kinetics of localized adsorption of cases, the gas and liquid mixtures on energetically heterogeneous solid surfaces.

Borowko, M. and Jaroniec, M. (1983), Current state in adsorption from multicomponent solutions of nonelectrolytes on solids. *Advances in Colloid and Interface Science*, **19** (1-2), 137-177.

Full Text: [A\Adv Col Int Sci19, 137.pdf](A/Adv%20Col%20Int%20Sci19,%20137.pdf)

Abstract: This paper surveys the research carried out on the adsorption from multicomponent liquid mixtures of nonelectrolytes on solids with emphasis on the work performed by the authors. The consistent theoretical treatment of adsorption from concentrated and dilute multicomponent solutions and its application to the liquid adsorption chromatography with the mixed mobile phase are presented. This treatment involves noideality of the bulk and surface phases, energetic heterogeneity of the adsorbent surface and it may be extended to multilayer adsorption from solutions.

The multicomponent liquid/solid adsorption systems, studies experimentally, are reviewed. Many of them have been examined by means of the equations derived for liquid adsorption on heterogeneous surfaces. These studies are summarized in this paper. Moreover, thhe model studies illustrating the influence of solution nonideality and adsorbent hetterogeneity on the excess adsorption isotherms and the distribution coefficient are discussed.

Patrykiejew, A. and Jaroniec, M. (1984), Partially mobile adsorption of gases on solid surfaces. *Advances in Colloid and Interface Science*, **20** (3-4), 273-339.

Full Text: [A\Adv Col Int Sci20, 273.pdf](A/Adv%20Col%20Int%20Sci20,%20273.pdf)

Abstract: This review deals with a general problem of the theoretical description of gas adsorption on solids. The approach presented is based on the concept of partially mobile and partially localized adsorption models. The survey of experimental work that led to the development of partially mobile and partially localized adsorption models is given. Experimental studies are examined, including a calorimetric study, more recent neutron scattering, nuclear magnetic resonance and Mössbauer spectroscopy data as well as the results obtained from computer simulations.

Both monolayer and multilayer regimes are discussed, with emphasis on the work concerning the monolayer region. In particular, it is shown that well known models of mobile and localized adsorption are only limiting cases of a more general, partially mobile adsorption model. The influence of various factors such as temperature, surface coverage, solid substrate structure, etc., on the surface mobility of adsorbed molecules is considered. It is shown that the theory correctly predicts experimentally found dependencies of two-dimensional critical and triple-print temperatures upon the dimensional incompatibility between adsorbate and adsorbent.

Finally, the extension of the model to the adsorption of gaseous mixtures on homogeneous solids is presented

Notes: IIsotherm

Tóth, J. (1995), Uniform interpretation of gas/solid adsorption. *Advances in Colloid and Interface Science*, **55**, 1-239.

Full Text: [A\Adv Col Int Sci55, 1.pdf](A/Adv%20Col%20Int%20Sci55,%201.pdf)

Abstract: A new form of Gibbs equation includes the differential function psi(Theta) having the form psi(Theta) = psi(P-r) = (Theta/p(r))(dp(r)/d Theta) where p(r) is the relative equilibrium pressure and Theta is the coverage. This relationship is the physical and mathematical base for a uniform interpretation (UI) of gas/solid physical adsorption. The function psi(Theta) is the relative free energy of the surface, therefore, it can be applied to define the thermodynamical correctness of adsorption isotherm equations. Two conditions of correctness have been defined. According to these conditions the change in the free energy of the surface must have finite values at Theta-> 0 and at p(r)-> 1. It has been proven that most of the known and widely-used isotherm equations are, from thermodynamic standpoint, incorrect. The first aim of UI is, with help of the differential equation psi(Theta), to transform the incorrect relationships into correct ones. The second aim is to derive new and correct isotherm equations applicable for practical and theoretical purposes. The third practical applicability of UI is that it provides an exact method to choose the appropriate and correct isotherm equation for describing measured isotherms. The most important role of UI is in the calculations of the specific surface area (a(s)) from measured isotherms of Type I and II. The UI modifies our old models (Langmuir, Fowler-Guggenheim, Sips, Jovanovich, Volmer, deBoer-Hill, BET etc.) applicable to calculate the specific surface area. This modification has two important consequences. The first one means that in the isotherm equations a new parameter, chi, appears and it has great influence on the value of a(s). The second one means that with help of function psi(p(r)) one can distinguish the monolayer and multilayer domains in isotherms of Type I and II. Furthermore, the uniform interpretation needs a new model, so-called “cloud model”, for interpretation of multilayer adsorption. This model has important theoretical and practical differences in comparison to the well-known BET theory and also provides new possibility to exact calculations of a(s). Based on the UI it is possible to calculate the mixed gas adsorption from the pure isotherms measured on heterogeneous surfaces and to qualify industrial adsorbents for practical use. As a consequence of UI it was possible to define the theorem of “referable states” of two dimensional layers (gases) wich corresponds to the “corresponding states” of three-dimensional gases. Shortly summarized: the uniform interpretation proposed in this review modifies our old views of classic models of physical adsorption.

Notes: IIsotherm

? Nygren, H. (1995), Logarithmic growth in surface adsorption. *Advances in Colloid and Interface Science*, **62** (2-3), 137-159.

Full Text: [1995\Adv Col Int Sci62, 137.pdf](1995/Adv%20Col%20Int%20Sci62,%20137.pdf)

Abstract: A review is made of experimental data on surface adsorption of particles and polymers from water solutions, their analysis and interpretation in terms of general theoretical models of surface adsorption. A characteristic isotherm and kinetics is found and defined as logistic growth. The discussion is focused on literature indicating a possibility of describing logistic growth by using statistical (probabilistic) models based on the mean stay time of molecules on the surface. The statistical approach is further elaborated as follows: ligands arriving at a surface have a binary choice - to bind or to become reflected. Since the number of attempts to bind, n, will be high we can use the true mean of the binomial distribution to describe the reaction and write: S = n a; where S is the number of successful attempts and a is the probability of binding. The probability, a, will depend on the site density and on the sticking probability of the ligand at the binding site.

Several experimental studies show that surface reactions have a nonlinear time- and concentration dependence and can be described by a Boltzmann factor of the form, I(1-e(-t/tau)); where I is the flux of ligands to the surface and tau = stay-time.

The exponential form indicates that the reactions are self-dependent, and a statistical model for description of such reactions will be of the form: S(t) = No(1-2(-alpha t))(2(-beta t)); where No is the number of molecules present in the system, a relates to the probability of positive cooperativity or t-dependent binding, and beta relates to the probability of desorption.

Keywords: Monoclonal-Antibodies, Hydrophobic Surface, Reaction-Kinetics, Antigen, Ferritin, Diffusion, Proteins, Binding, Aggregation, Fibrinogen

Donohue, M.D. and Aranovich, G.L. (1998), Classification of Gibbs adsorption isotherms. *Advances in Colloid and Interface Science*, **76-77**, 137-152.

Full Text: [A\Adv Col Int Sci76-77, 137.pdf](A/Adv%20Col%20Int%20Sci76-77,%20137.pdf)

Abstract: The current IUPAC classification of gas-solid adsorption isotherms has two deficiencies: it is incomplete and it gives the incorrect impression that adsorption isotherms are always monotonically increasing functions of pressure. However, there are many isotherms that are not monotonic and show maxima. The reason for this deficiency is that the IUPAC classification is based conceptually on ideas about the ‘absolute’ adsorption rather than on the Gibbs adsorption. It is shown here that supercritical gases show adsorption isotherms which are fundamentally different from those in the IUPAC classification.There are experimental data for hydrocarbons, inert gases, nitrogen, carbon oxide, carbon dioxide, nitrogen oxides, and others on microporous and macroporous adsorbents for supercritical temperatures showing nonmonotonic isotherms with maxima. It also is shown that the Ono-Kondo lattice model is able to predict all known types of adsorption behavior. By changing two energetic parameters (energies for adsorbate-adsorbate and adsorbate-adsorbent interactions), one can obtainsmooth or stepped multilayer adsorption isotherms for macroporous adsorbents. It also is possible to describe adsorption on microporous adsorbents by imposing the appropriate boundary conditions. The Ono-Kondo model also predicts steps in isotherms similar to those observed in high resolution measurements for nitrogen and oxigen on zeolites. The monolayer version of the Ono-Kondo theory gives all known types of monolayer adsorption isotherms.

Keywords: Gas-Solid Equilibria, Gibbs Adsorption, Isotherms, Supercritical Fluids, Lattice Model, Physical Adsorption, High-Pressures, Gases, Carbon, Methane, Argon

Jones, M.N. and Bryan, N.D. (1998), Colloidal properties of humic substances. *Advances in Colloid and Interface Science*, **78** (1), 1-48.

Full Text: [A\Adv Col Int Sci78, 1.pdf](A/Adv%20Col%20Int%20Sci78,%201.pdf)

Abstract: Humic substances are structurally complex large to macromolecules which occur in soils and natural waters as a consequence of the breakdown of plant and animal residues by microbial activity. A major portion (approx. 50%) of the earth’s carbon is in the form of humic materials (fulvic and humic acids). The characterisation of humic substances is a major problem due to their heterogeneity both in. terms of structure and size and to their tendency to associate in solutions as their concentration increases. Methods of characterisation of humic materials are reviewed and their interactions with substances such as clay particles, herbicides, pesticides and metallic ions which occur in the natural environment considered. The experimental methods of investigating the binding of metallic ions are also reviewed. There have been several approaches to the molecular modelling of metal ion binding based on the representation of humic molecules as colloidal particles with an associated electrical double layer. The various theoretical models have been described and the relative merits of the approaches compared. (C) 1998 Elsevier Science B.V. All rights reserved.

Keywords: Humic Material, Soil, Colloidal Particles, Metal-Ion Binding, Field-Flow Fractionation, Aquatic Fulvic-Acid, Dynamic Light-Scattering, Soil Organic-Matter, Unified Physicochemical Description, Conditional Stability-Constants, Laser Fluorescence Spectroscopy, Solid-Solution Distributions, Poly-Electrolyte Properties

Arora, A.K. and Tata, B.V.R. (1998), Interactions, structural ordering and phase transitions in colloidal dispersions. *Advances in Colloid and Interface Science*, **78** (1), 49-97.

Full Text: [A\Adv Col Int Sci78, 49.pdf](A/Adv%20Col%20Int%20Sci78,%2049.pdf)

Abstract: The structural ordering in colloidal dispersions is found to be very similar to that of atomic systems, such as crystalline solids, atomic liquids and even glasses. A number of intrinsic as well as extrinsic parameters influence the stability of colloids and induce transitions between different phases. It is the richness of the phase behavior that makes the colloids interesting also from the fundamental point of view. This article reviews the recent advances in the area of ordering and phase transitions brought about by parameters such as particle volume fraction, surface charge density, polydispersity, added electrolyte and external fields, such as shear, electric, magnetic and laser optical fields. Some of the recent experimental techniques that provide insight into the ordering phenomena are also covered. Microscopic investigations of suspensions under confined geometries and their implications on current understanding of the effective interparticle interact: ion are discussed. Finally, recent efforts in the direction of epitaxial growth of ordered structures on specially designed templates and their applications in synthesizing advanced materials are also briefly reviewed. (C) 1998 Elsevier Science Ltd. All rights reserved.

Keywords: Soft Condensed Matter, Complex Fluids, Colloidal Dispersions, Structural Ordering, Phase Transitions, Scattering Techniques, X-Ray-Scattering, Charge-Polydisperse Colloids, Hard-Sphere Colloids, Diffusing-Wave Spectroscopy, Repulsion-Only Assumption, Vapor-Liquid Condensation, Density-Functional Theory, Low Ionic-Strength, Light-Scattering, Glass-Transition

Thomas, J.K. and Ellison, E.H. (2001), Various aspects of the constraints imposed on the photochemistry of systems in porous silica. *Advances in Colloid and Interface Science*, **89-90**, 195-238.

Full Text: [A\Adv Col Int Sci89-90, 195.pdf](A/Adv%20Col%20Int%20Sci89-90,%20195.pdf)

Abstract: This manuscript briefly reviews the photochemistry of organic molecules on porous silica (or SiO2). To gain an understanding of the chemistry on silica, data are displayed and discussed with respect to studies in homogeneous solution. In particular, the exact dimensionality of kinetic processes on porous SiO2 is a matter for debate. Hence, units of concentration of an adsorbate on the surface are expressed as moles per nanometer squared and as moles per liter, in order to compare with solution. Many studies show that organic molecules adsorb to SiO2 via the surface silanol (or surface hydroxyl OH) groups. The adsorption is heterogeneous, due to various clusters of silanol groups and to charge transfer (CT) sites. Photophysical studies clearly show these effects. The photo-induced reactions on SiO2 may be described by `fractal’ approaches, but a `Gaussian’ approach is often more useful to the photochemist. Photo-induced reactions occur via movement of the reactants on the surface, as in the case of the Langmuir–Hinshelwood (LH) mechanism or, as in the case of the Eley–Rideal (ER) mechanism, by bombardment of a surface bound excited state by a gaseous reactant, such as O2. Quenching of excited singlet states by O2 produces excited triplet states, which in turn are quenched to give singlet molecular oxygen. At room temperature the O2 quenching process on silica occurs by both mechanisms to approximately the same extent. However, the LH mechanism is dominant at lower temperatures and the ER mechanism is dominant at higher temperatures. Some quenchers, including carbon tetrachloride and tetranitromethane only quench by the LH mechanism giving rise to static quenching and chloro or nitro derivatives of the excited state. Photo-induced electron transfer between excited arenes and amines occurs readily, but the ionic products are short-lived compared to solution. This is due to the limited diffusion of the products on the surface, which in turn promotes back-electron transfer. Photoionization of arenes occurs on SiO2 via a two-photon process and gives very long-lived ions compared to solution. This is due to trapping of the photo-produced electrons by the SiO2 itself. Finally, the effects of co-adsorbants, including solvents, surfactants, and polymers, in photoreactions at the SiO2 surface are considered. The review ends with suggestions for future studies.

Keywords: Photochemistry, Organic Molecules, Porous Silica (SiO2)

Notes: highly cited, IIsotherm

Dąbrowski, A. (2001), Adsorption - from theory to practice. *Advances in Colloid and Interface Science*, **93** (1-3), 135-224.

Full Text: [A\Adv Col Int Sci93, 135.pdf](A/Adv%20Col%20Int%20Sci93,%20135.pdf)

Abstract: Adsorption at various interfaces has concerned scientists since the beginning of this century. This phenomenon underlies a number of extremely important processes of utilitarian significance. The technological, environmental and biological importance of adsorption can never be in doubt. Its practical applications in industry and environmental protection are of paramount importance. The adsorption of substrates is the first stage in many catalytic processes. The methods for separation of mixtures on a laboratory and on an industrial scale are increasingly based on utilising the change in concentration of components at the interface. Moreover, such vital problems as purification of water, sewages, air and soil are involved here too. On the other hand, many areas in which technological innovation has covered adsorption phenomena have been expanded more through art and craft than through science. A basic understanding of the scientific principles is far behind; in part because the study of interfaces requires extremely careful experimentation if meaningful and reproducible results are to be obtained. In recent years, however, considerable effort has been increasingly directed toward closing the gap between theory and practice. Crucial progress in theoretical description of the adsorption has been achieved, mainly through the development of new theoretical approaches formulated on a molecular level, by means of computer simulation methods and owing to new techniques which examine surface layers or interfacial regions. Moreover, during the last 15 years new classes of solid adsorbents have been developed, such as activated carbon fibres and carbon molecular sieves, fullerenes and heterofullerenes, microporous glasses and nanoporous - both carbonaceous and inorganic - materials. Nanostructured solids are very popular in science and technology and have gained extreme interest due to their sorption, catalytic, magnetic, optical and thermal properties. Although the development of adsorption up to the 1918s has been following rather a zig-zag path, this arm of surface science is now generally considered to have become a well-defined branch of physical science representing an intrinsically interdisciplinary area between chemistry, physics, biology and engineering. This review presents in brief the history of adsorption and, highlights the progress in theoretical description of the phenomenon under consideration. The paper deals with the above problems critically, showing the development of adsorption, presenting some of the latest important results and giving a source of up-to-date literature on it. Moreover, in this paper the most important aspects are overviewed referring to today’s trends and visions in application of adsorption science in industry, environmental protection and in environmental analysis. The relationship between development of adsorption theory and adsorption practice is pointed out. Current understanding and perspectives pertaining to applications of adsorption phenomena on laboratory and on industrial scale as well as environmental protection are discussed and illustrated by means of a few spectacular examples. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Activated Carbon, Activated Carbon Fibres, Adsorbents, Adsorption, Analysis, Art, Binary-Liquid Mixtures, Biology, Carbon, Chemistry, Computer Simulation, Development, Energy-Distribution Function, Environmental, First, Fullerenes, Gas-Adsorption, Heterogeneous Solid-Surfaces, History, Innovation, Interdisciplinary, Interfaces, Literature, Magnetic, Mesoporous Molecular-Sieves, Methods, Monte-Carlo Simulation, Multicomponent Solutions, Physical Adsorption, Porous Silica-Gels, Practice, Pressure Swing Adsorption, Principles, Protection, Purification, Review, Rights, Science, Science and Technology, Separation, Simulation, Soil, Sorption, Techniques, Technological Innovation, Technology, Theory, Trends, Understanding, Visions, Water

Karraker, K.A. and Radke, C.J. (2002), Disjoining pressures, zeta potentials and surface tensions of aqueous non-ionic surfactant/electrolyte solutions: theory and comparison to experiment. *Advances in Colloid and Interface Science*, **96** (1-3), 231-264.

Full Text: [A\Adv Col Int Sci96, 231.pdf](A/Adv%20Col%20Int%20Sci96,%20231.pdf)

Abstract: A self-consistent electrostatic theory is presented to predict disjoining pressure isotherms of aqueous thin-liquid films stabilized by non-ionic surfactants and air/water surface tensions and zeta potentials of electrolyte solutions with and without non-ionic surfactant. The proposed model combines specific adsorption of hydroxide ions at the interface with image charge and dispersion forces on ions in the diffuse double layer. The result is a quantitative description of aqueous solution interfaces as a function of surfactant concentration, ionic strength and pH. Disjoining pressure isotherms of thin-liquid films stabilized by non-ionic surfactants and electrophoresis experiments on air bubbles and oil droplets in aqueous solutions demonstrate that hydroxide ions specifically adsorb at air/water and oil/water interfaces. The surface charge increases with pH, decreases with increasing surfactant concentration, increases slightly with ionic strength, and for *n*-alkyl polyethylene oxide non-ionic surfactants is not significantly affected by surfactant molecular structure. Concentrated electrolyte-solution surface tensions, however, indicate that ions are repelled from the air/water interface by an ‘image charge’ force, that is parameterized by the ion valence and the ionic strength of the aqueous solution. Additionally, differences in induced–induced dipole forces on an ion near an interface lead to a van der Waals dispersion interaction force that depends on the ion polarizabilites and the molecular properties of the two surrounding bulk phases. Incorporation of these two additional ion free energies into the Poisson–Boltzmann equation along with a simple model for hydroxide-ion specific adsorption at the air/water interface results in a non-linear second-order ordinary differential equation containing two adjustable parameters. The proposed modified Poisson–Boltzmann (MPB) theory accurately predicts newly measured disjoining pressures of thin-liquid foam films stabilized by polyethylene oxide *n*-alkyl ether surfactants. With no additional adjustable parameters, zeta potentials of nascent air bubbles in water and surface tensions of aqueous electrolyte solutions are successfully predicted. The new electrostatic model also explains the fascinating existence of a surface tension minimum in dilute electrolyte solutions, known as the Jones–Ray effect.

Keywords: Thin-Film Disjoining Pressures, Air/Water Surface Tensions and Zeta Potentials, Non-Ionic Surfactant/Electrolyte Solutions, Modified Poisson–Boltzmann Theory, Image Charge and Excess Dispersion Interaction Forces

? Hoa, M.L.K., Lu, M.H. and Zhang, Y. (2006), Preparation of porous materials with ordered hole structure. *Advances in Colloid and Interface Science*, **121** (1-3), 9-23.

Full Text: [2006\Adv Col Int Sci121, 9.pdf](2006/Adv%20Col%20Int%20Sci121,%209.pdf)

Abstract: This review paper investigates the synthesis of porous structures with controlled hole pattern and provides an overall view of the various factors involved when synthesizing such porous materials. The following factors are discussed: 1) various methods of synthesis to produce the porous structures; 2) materials which the porous structures are made of; 3) control of the pore structure; 4) various applications of such porous materials. The materials of the porous structures and the control of the pore structure will also be discussed separately under each different method, as these two factors are closely dependent on the method of fabrication. (c) 2006 Elsevier B.V. All rights reserved.

Keywords: Porous, Colloid, Templating, Breath Figures, Copolymer Thin-Films, Self-Organized Honeycomb, TiO2 Macrocellular Foams, Block-Copolymer, Photonic Crystals, Colloidal Crystals, Polymer-Films, Macroporous Structures, Microporous Materials, Optical Wavelengths

? Parida, S.K., Dash, S., Patel, S. and Mishra, B.K. (2006), Adsorption of organic molecules on silica surface. *Advances in Colloid and Interface Science*, **121** (1-3), 77-110.

Full Text: [2006\Adv Col Int Sci121, 77.pdf](2006/Adv%20Col%20Int%20Sci121,%2077.pdf)

Abstract: The adsorption behaviour of various organic adsorbates on silica surface is reviewed. Most of the structural information on silica is obtained from IR spectral data and from the characteristics of water present at the silica surface. Silica surface is generally embedded with hydroxy groups and ethereal linkages, and hence considered to have a negative charged surface prone to adsorption of electron deficient species. Adsorption isotherms of the adsorbates delineate the nature of binding of the adsorbate with silica. Aromatic compounds are found to involve the pi-cloud in hydrogen bonding with silanol OH group during adsorption. Cationic and nonionic surfactants adsorb on silica surface involving hydrogen bonding. Sometimes, a polar part of the surfactants also contributes to the adsorption process. Styryl pyridinium. dyes are found to anchor on silica surface in flat-on position. On modification of the silica by treating with alkali, the adsorption behaviour of cationic surfactant or polyethylene glycol changes due to change in the characteristics of silica or modified silica surface. In case of PEG-modified silica, adsolubilization of the adsorbate is observed. By using a modified adsorption equation, hemimicellization is proposed for these dyes. Adsorptions of some natural macromolecules like proteins and nucleic acids are investigated to study the hydrophobic and hydrophilic binding sites of silica. Artificial macromolecules like synthetic polymers are found to be adsorbed on silica surface due to the interaction of the multifunctional groups of the polymers with silanols. Preferential adsorption of polar adsorbates is observed in case of adsorbate mixtures. When surfactant mixtures are considered to study competitive adsorption on silica surface, critical micelle concentration of individual surfactant also contributes to the adsorption isotherm. The structural study of adsorbed surface and the thermodynamics of adsorption are given some importance in this review. (c) 2006 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Silica, Surfactants, Polymers, Dyes, Hemimicelle, Biomolecules, Solid-Liquid Interface, Sodium Dodecyl-Sulfate, Styryl Pyridinium Dyes, Nuclear-Magnetic-Resonance, Carbon-Tetrachloride Interface, Infrared-Absorption Spectra, Aqueous-Solution Interface, Vinyl-Acetate Copolymer, Atomic-Force Microscopy, Good Solvent Conditions

? Bhattacharyya, K.G. and Gupta, S.S. (2008), Adsorption of a few heavy metals on natural and modified kaolinite and montmorillonite: A review. *Advances in Colloid and Interface Science*, **140** (2), 114-131.

Full Text: [2008\Adv Col Int Sci140, 114.pdf](2008/Adv%20Col%20Int%20Sci140,%20114.pdf)

Abstract: The feasibility of using two important and common clay minerals, kaolinite and montmorillonite, as adsorbents for removal of toxic heavy metals has been reviewed. A good number of works have been reported where the modifications of these natural clays were done to carry the adsorption of metals from aqueous solutions. The modification was predominantly done by pillaring with various polyoxy cations of Zr4+, Al3+, Si4+, Ti4+, Fe3+, Cr3+ or Ga3+, etc. Preparation of pillared clays with quaternary ammonium cations, namely, tetramethylammonium-, tetramethylphosphonium- and trimethyl-phenylammonium-, N’-didodecyl-N, N’-tetramethylethanediammonium, etc, are also common. Moreover, the acid treatment of clays often boosted their adsorption capacities. The adsorption of toxic metals, viz., As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Zn, etc., have been studied predominantly. Montmorillonite and its modified forms have much higher metal adsorption capacity compared to that of kaolinite as well as modified-kaolinite. © 2008 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Heavy Metals, Kaolinite, Modified Clay, Montmorillonite

? Ahmaruzzaman, M. (2008), Adsorption of phenolic compounds on low-cost adsorbents: A review. *Advances in Colloid and Interface Science*, **143** (1-2), 48-67.

Full Text: [2008\Adv Col Int Sci143, 48.pdf](2008/Adv%20Col%20Int%20Sci143,%2048.pdf)

Abstract: Adsorption techniques are widely used to remove certain classes of pollutants from wastewater. Phenolic compounds represent one of the problematic groups. Although commercial activated carbon is a preferred adsorbent for phenol removal, its widespread use is restricted due to the high cost. As such, alternative non-conventional adsorbents have been investigated. The natural materials, waste materials from industry and agriculture and bioadsorbents can be employed as inexpensive adsorbents. The review (i) presents a critical analysis of these materials: (II) describes their characteristics, advantages and limitations; and (III) discusses the various mechanisms involved. There are several issues and drawbacks concerned on the adsorption of phenolic compounds that have been discussed in this review article. It is evident from the review that low-cost adsorbents have demonstrated high removal capabilities for certain phenolic compounds. In particular. industrial waste might be a promising adsorbent for environmental and purification purposes. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Phenol, Substituted Phenol, Activated Carbon, Low-Cost Adsorbents, Granular Activated Carbon, Bagasse Fly-Ash, Polycyclic Aromatic-Hydrocarbons, Pinus-Pinaster Bark, Waste-Water, Aqueous-Solutions, Phanerochaete-Chrysosporium, Chlorinated Phenols, Organic Pollutants, Beta-Cyclodextrin

? Plazinski, W., Rudzinski, W. and Plazinska, A. (2009), Theoretical models of sorption kinetics including a surface reaction mechanism: A review. *Advances in Colloid and Interface Science*, **152** (1-2), 2-13.

Full Text: [2009\Adv Col Int Sci152, 2.pdf](2009/Adv%20Col%20Int%20Sci152,%202.pdf)

Abstract: A review of a certain class of theoretical models describing the kinetics of pollutants sorption onto various sorbents is presented. These assuming the rate of surface reaction as the rate-limiting step are considered. A special attention is paid to possible theoretical grounds of the most commonly applied mathematical expressions, such as the pseudo-second and the pseudo-first order equations. Simple theoretical considerations based on some fundamental theories suggest that these two formulae do not correspond to any specific physical model. They simply approximate well the behaviours predicted by many different theoretical approaches. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Aqueous-Solutions, Calcium Alginate Beads, Divalent Metal-Ions, Heterogeneous Solid, Solution Interfaces, Kinetics, Linked Chitosan Beads, Liquid-Phase Adsorption, Low-Cost Adsorbents, Mechanism, Methylene-Blue, Model, Modeling, Models, NOV, Physical, Pollutants, Pollutants Removal, Pseudo First Order, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Rate Limiting Step, Rate-Limiting Step, Review, Rights, Sorbents, Sorption, Sorption Kinetics, Statistical Rate Theory, Surface, Surface Reaction, Theoretical Models

? Bhatnagar, A. and Sillanpää, M. (2009), Applications of chitin- and chitosan-derivatives for the detoxification of water and wastewater: A short review. *Advances in Colloid and Interface Science*, **152** (1-2), 26-38.

Full Text: [2009\Adv Col Int Sci152, 26.pdf](2009/Adv%20Col%20Int%20Sci152,%2026.pdf)

Abstract: Chitin and chitosan-derivatives have gained wide attention as effective biosorbents due to low cost and high contents of amino and hydroxyl functional groups which show significant adsorption potential for the removal of various aquatic pollutants. In this review, an extensive list of chitin- and chitosan-derivatives from vast literature has been compiled and their adsorption capacities for various aquatic pollutants as available in the literature are presented. This paper will give an overview of the principal results obtained during the treatment of water and wastewater utilizing chitin and chitosan-derivatives for the removal of: (a) metal cations and metal anions; (b) radionuclides; (c) different classes of dyes; (d) phenol and substituted phenols; (e) different anions and other miscellaneous pollutants. The review provides a summary of recent information obtained using batch studies and deals with the various adsorption mechanisms involved. It is evident from the literature survey that chitin- and chitosan-derivatives have shown good potential for the removal of various aquatic pollutants. However, still there is a need to find out the practical utility of such developed adsorbents on commercial scale. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Water Treatment, Adsorption, Chitin, Chitosan, Review, Cross-Linked Chitosan, Aqueous-Solutions, Reactive Dye, Metal-Ions, Comparative Adsorption, Hexavalent Chromium, Biopolymer Chitosan, Quaternary Chitosan, Hydrogel Beads, Acid-Solutions

? Sen Gupta, S. and Bhattacharyya, K.G. (2011), Kinetics of adsorption of metal ions on inorganic materials: A review. *Advances in Colloid and Interface Science*, **162** (1-2), 39-58.

Full Text: [2011\Adv Col Int Sci162, 39.pdf](2011/Adv%20Col%20Int%20Sci162,%2039.pdf)

Abstract: It is necessary to establish the rate law of adsorbate–adsorbent interactions to understand the mechanism by which the solute accumulates on the surface of a solid and gets adsorbed to the surface. A number of theoretical models and equations are available for the purpose and the best fit of the experimental data to any of these models is interpreted as giving the appropriate kinetics for the adsorption process. There is a spate of publications during the last few years on adsorption of various metals and other contaminants on conventional and non-conventional adsorbents, and many have tried to work out the kinetics. This has resulted from the wide interest generated on using adsorption as a practical method for treating contaminated water. In this review, an attempt has been made to discuss the kinetics of adsorption of metal ions on inorganic solids on the basis of published reports. A variety of materials like clays and clay minerals, zeolites, silica gel, soil, activated alumina, inorganic polymer, inorganic oxides, fly ash, etc. have been considered as the adsorbents and cations and anions of As, Cd, Co, Cr, Cu, Fe, Hg, Mn, Ni, Pb, Se, and Zn as adsorbate have been covered in this review. The majority of the interactions have been divided into either pseudo first order or second order kinetics on the basis of the best fit obtained by various groups of workers, although second order kinetics has been found to be the most predominant one. The discussion under each category is carried out with respect to each type of metal ion separately. Application of models as given by the Elovich equation, intra-particle diffusion and liquid film diffusion has also been shown by many authors and these have also been reviewed. The time taken for attaining equilibrium in each case has been considered as a significant parameter and is discussed almost in all the cases. The values of the kinetic rate coefficients indicate the speed at which the metal ions adsorb on the materials and these are discussed in all available cases. The review aims to give a comprehensive picture on the studies of kinetics of adsorption during the last few years.

? Chen, Y., Zhu, Y.C., Wang, Z.C., Li, Y., Wang, L.L., Ding, L.L., Gao, X.Y., Ma, Y.J. and Guo, Y.P. (2011), Application studies of activated carbon derived from rice husks produced by chemical-thermal process: A review. *Advances in Colloid and Interface Science*, **163** (1), 39-52.

Full Text: [2011\Adv Col Int Sci163, 39.pdf](2011/Adv%20Col%20Int%20Sci163,%2039.pdf)

Abstract: The production of functional activated carbon materials starting from cheap natural precursors using environmentally friendly processes is a highly attractive subject in material chemistry today. Recently, much attention has been focused on the use of plant biomass to produce functional carbonaceous materials, encompassing economic, environmental and social issues. Besides the classical route to produce activated carbons from fossil materials, rice husk shows clear advantages in that it can generate a variety of cheap and sustainable carbonaceous materials with attractive nanostructure and functional patterns for a wide range of applications. From a comprehensive literature review, it was found that porous carbon that derived from rice husks, in addition to having wide availability, has fast kinetics and appreciable adsorption capacities too. Porous carbon materials also play a significant role in new applications such as catalytic supports, battery electrodes, capacitors, and gas storage. In this review, an extensive list of rice husks literature has been compiled. Conclusions have been drawn from the literature reviewed, and suggestions for future research are proposed. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Rice Husk, Porous Carbon, Preparation, Application, Phosphoric-Acid Activation, Low-Cost Adsorbents, Tetrahedral Amorphous-Carbon, Agricultural By-Products, Bagasse-Fly-Ash, Waste-Water, Porous Carbon, Dye Removal, Aqueous-Solutions, Malachite Green

# Title: Advances in Consumer Research

Full Journal Title: [Advances in Consumer Research](http://weblinks3.epnet.com/authHjafDetail.asp?tb=1&_ua=bo+B%5F+db+pbhjnh+bt+ID++ACR+3FE1&_ug=sid+2730F771%2D4B76%2D462A%2DABA0%2DEC5FC2F0FEC2%40sessionmgr2+dbs+pbh+0329&_us=hd+True+sm+ES+4DBA&_uso=st%5B0+%2DID++ACR+tg%5B0+%2D+db%5B0+%2Dpbh+op%5B0+)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Phillips, D.M., Baumgartner, H. and Pieters, R. (1999), Influence in the evolving citation network of the *Journal of Consumer Research*. *Advances in Consumer Research*, **26**, 203-210.

Full Text: [1999\Adv Con Res26, 203.pdf](1999/Adv%20Con%20Res26,%20203.pdf)

Abstract: We report a bibliometric study of 27 journals with which the Journal of Consumer Research (JCR) has had significant communication links over the 12-year period 1982 to 1993. Two issues that have not been considered in previous citation studies in marketing are addressed: how influential are journals, and how does influence evolve over time? The analyses indicate that a small set of marketing and psychology journals wields a disproportionate amount of influence and that the influence of marketing journals is almost entirely confined to the marketing field. Longitudinal analyses show substantial stability in the network over the 12-year period, although JCR has clearly increased in influence

Keywords: Bibliometric, Citation, Index, Journals, Research

# Title: Advances in Dental Research

Full Journal Title: Advances in Dental Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bian, J.Y., Li, R.Y. and Wang, W.J. (1995), Feasibility of milk fluoridation and trends in dental caries of children in China. *Advances in Dental Research*, **9** (2), 112-115.

Abstract: The aim of the study is to investigate the feasibility of milk fluoridation as a vehicle for caries prevention, based on the current epidemiological status and its trends of dental caries in preschool children in the area of the Haidian District of Beijing, where the indications exist: Fluoride level in drinking water is low (0.2-0.3 ppm), and water fluoridation and other systemic uses of fluorides are unlikely. From 75.9 to 79.7% of 3-6-year-old children were identified as having high caries experience (dmft 4.29-4.35). It was found that 60% of the preschool children who attended kindergarten were 3-6 years old, and 40% of the 1-2-year-olds were living with their families. There is a local dairy to produce milk for the population living in this district. The amount of fresh milk produced daily is about 50,000-60,000 kg. A special kind of milk with vitamins A and D is also available for the preschool children. Data available from the Community MCH Centre indicated that the percentage of breast-feeding is 12% only. The first choice by parents for artificial feeding to the babies is fresh or powdered milk. Therefore, the breast-feeding project started in 1992. It is recommended that mothers’ milk should be provided to the babies for at least four months after birth, when a specially prescribed milk for the babies, produced by the dairy, will be provided on a daily basis. The cost of milk is cheaper than others. In this connection, a five-year project on milk fluoridation as a pilot study at the community level for caries prevention of preschool children is now planned. The project is supported by BDMF, WHO, and Chinese MOPH.

? Reifel, N.M., Davidson, P.L., Rana, H. and Nakazono, T.T. (1997), ICS-II USA research locations: Environmental, dental care delivery system, and population sociodemographic characteristics. *Advances in Dental Research*, **11** (2), 210-216.

Abstract: Secondary data sources are used to describe the ICS-II USA research locations in terms of external environment, dental care delivery system, and population sociodemographics. The Native American reservations located in Arizona, New Mexico, and South Dakota were rural, while the other research locations were primarily urban. Baltimore, Maryland, and the Native American communities had fluoridated water, but San Antonio did not. Dental services in Baltimore and San Antonio were predominantly financed by private sources, with a small public health component. Dental care services in Native American communities were largely Indian Health Services (IHS) financed by the US Government. Each geographical area exhibited diverse characteristics indicating unique challenges for the delivery of community and clinical dental services.

# Title: Advances in Earth Science

Full Journal Title: [Advances in Earth Science](http://e29.cnki.net/KNS50/Navi/item.aspx?NaviID=1&BaseID=DXJZ&NaviLink=%e5%9c%b0%e7%90%83%e7%a7%91%e5%ad%a6%e8%bf%9b%e5%b1%95)

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Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zhang, Z., Xu, X.F., Wang, W.D., Wang, X.C., Zhang, H.G., Leng, C.X. and Hu, X. (2006), A bibliometric analysis on the priority areas in atmospheric sciences. *Advances in Earth Science*, **21** (7), 757-762.

Full Text: [2006\Adv Ear Sci21, 757.pdf](2006/Adv%20Ear%20Sci21,%20757.pdf)

Abstract:Based on the survey of the domestic organizations in atmospheric sciences and the related areas, as well as the recent papers of international and Chinese journals of atmospheric sciences, a bibliometric analysis on priority areas in atmospheric sciences ismade. The study is conducted from 4 different aspects: domestic basis, national research hot issues, international hot issues and domestic demand. The sequence of the distinct atmospheric fields is collated by assigningweight based on various policy preferences. The analysis shows thatwhether the basic research or the applied research is emphasized, more returnsmay be obtained by giving priorities to weathermodification and the atmospheric physics. When scientific hot topics and the scientific frontiers are focused, we may acquire greater research achievements as climate system and global change, weather dynamics and weather forecast being given priorities. Giving priorities to comp rehensive sounding system and atmospheric chemistry may bring more benefitswhen development demand and the scientific frontiers are stressed. The results provide abasis for better understanding the development situation of atmospheric sciences in china, establishing medium and long term strategies of atmospheric sciences, as well as develop ing p riority strategies for 11th five year plan.

Keywords: Atmospheric Sciences, Priority Areas, Bibliometric Analysis

# Title: Advances in Environmental Research

Full Journal Title: [Advances in Environmental Research](http://www.sciencedirect.com/science?_ob=PublicationURL&_tockey=%23TOC%236617%232004%23999919996%23477892%23FLA%23&_cdi=6617&_pubType=J&view=c&_auth=y&_acct=C000051951&_version=1&_urlVersion=0&_userid=7760848&md5=27804af49d7c0f211b893ad899ccdb53)

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Engineering, Environmental: Impact Factor 0.647, / (2001); Impact Factor 0.776, / (2002)

Engineering, Chemical: Impact Factor 0.647, / (2001); Impact Factor 0.776, / (2002)

Overcash, M. (1997), European cleaner technology research. *Advances in Environmental Research*, **1** (1), 1-14.

Full Text: [A\Adv Env Res1, 1.pdf](A/Adv%20Env%20Res1,%201.pdf)

Abstract: Cleaner manufacturing is an increasingly important goal for industry in Europe for both existing and new facilities. Toward this goal, significant research funding is made available by governments and industry in Europe to achieve cleaner process and product technologies. The purpose of this review is to encourage trans-Atlantic exchange of pollution prevention developments through a better understanding of specific activities taking place in Europe. The European funding goals are to improve industrial competitiveness and technology transfer to industry. Recurring topics include plastic and polymers recycling, expansion of products with renewable materials, recycle of an increasing number of chemicals, diverse CFC replacement, carbon dioxide utilization, and reduced chemical use.

Keywords: Pollution Prevention, Cleaner Production, Process R&D, Recycle, Reuse, Low Emission Techniques, Source Reduction, CFC, Energy Reduction

Luo, Y.Y. and Hong, A. (1997), Oxidation and dissolution of lead in chlorinated drinking water. *Advances in Environmental Research*, **1** (1), 84-97.

Full Text: [A\Adv Env Res1, 84.pdf](A/Adv%20Env%20Res1,%2084.pdf)

Abstract: The presence of lead in drinking water has become a major public health concern. Chlorination is the most commonly used method for disinfection of drinking water in the US. This paper investigates the potential influence of free chlorine (HOCl and OCl-) and dissolved oxygen on lead levels found in waters supplied through plumbing systems containing lead components. Batch experiments were conducted using both reconstituted and tap waters under various pH, free chlorine, dissolved oxygen, total carbonate, chloride, temperature, and contact surface area conditions. The results showed that lead leaching was greatly accelerated under low pH and oxygenated conditions, but modestly increased by free chlorine and chloride ion. A two-stage mechanism is proposed to explain lead leaching into drinking water that involves 1) the direct oxidation of the lead surface by an oxidant, followed by 2) dissolution of the resultant surface oxidation product minerals.

Keywords: Corrosion, Leaching, Lead, Water, Chlorine

Al-Asheh, S. and Duvnjak, Z. (1997), Adsorption of metal ions by moss. *Advances in Environmental Research*, **1** (2), 194-212.

Full Text: [A\Adv Env Res1, 194.pdf](A/Adv%20Env%20Res1,%20194.pdf)

Lytle, D.A. and Schock, M.R. (1997), An investigation of the impact of alloy composition and pH on the corrosion of brass in drinking water. *Advances in Environmental Research*, **1** (2), 213-233.

Full Text: [A\Adv Env Res1, 213.pdf](A/Adv%20Env%20Res1,%20213.pdf)

Shach-Caplan, M., Grader, G. and Kehat, E. (1997), Recycling of chlorine from PVC waste. *Advances in Environmental Research*, **1** (2), 234-242.

Full Text: [A\Adv Env Res1, 234.pdf](A/Adv%20Env%20Res1,%20234.pdf)

Gardea-Torresdey, J.L., Tiemann, K.J., Gamez, G., Dokken, K. and Pingitore, N.E. (1999), Recovery of Gold(III) by Alfalfa Biomass and Binding Characterization Using X-Ray Microfluoresence. *Advances in Environmental Research*, **3** (1), 83-93.

Full Text: [A\Adv Env Res3, 83.pdf](A/Adv%20Env%20Res3,%2083.pdf)

Abstract: There is a need for the development of a system that can extract gold from solutions without the use of hazardous chemicals. A biorecovery system using alfalfa biomass may be the answer for the recovery of gold(III) from aqueous solutions in an environmentally friendly manner. Batch laboratory experiments indicate that alfalfa binds gold(III) quickly and in a pH-independent manner. Gold(III) binding capacity experiments performed with the alfalfa roots and shoots have shown the following capacities: 40 mg gold per gram of shoot tissues; 19 mg gold per gram of root tissues. We were able to recover up to 99% of the bound gold metal by treatment with 0.2 M acidic thiourea. Surprisingly, we discovered that the bound gold turned purple in color, indicating that gold(III) could have been reduced to gold(0). In addition, column experiments were performed with silica-immobilized alfalfa to determine the gold(III) binding ability under flow conditions. XRMF analysis corroborated the presence of bound gold and confirmed that gold(III) was bound to the alfalfa biomass through a chemical process rather than physical entrapment in the support matrix.

Keywords: Pollution Prevention, Heavy Metal Binding, Gold, Phytofiltration, Alfalfa, XRMF, Metal Recovery

Mortazavi, S., Tezel, F.H., Tremblay, A.Y. and Volchek, K. (1999), Effect of pH on the uptake of arsenic from contaminated water by activated alumina. *Advances in Environmental Research*, **3** (1), 103-118.

Full Text: [A\Adv Env Res3, 103.pdf](A/Adv%20Env%20Res3,%20103.pdf)

Abstract: A process has been developed to remove arsenic from contaminated water and wastewater. The effect of initial and operating pH on the uptake of arsenic by two types of activated alumina was investigated in this work. Arsenic concentrations of less than 50 µg/L were obtained within ten minutes from solutions with initial arsenic levels of greater than 40 mg/L. Lower residual arsenic concentrations were achieved when a constant pH was maintained throughout the experiments. The optimum pH for arsenic removal was between 2 and 5, with pH 3 resulting in better aresenic removal. The effect of the presence of sulphate on arsenic uptake by alumina was studied. The presence of sulphate at concentrations higher than 100 mg/L significantly inhibited arsenic adsorption.

Keywords: Arsenic, Activated Alumina, pH, Sulphate, Water and Wastewater Treatment, Adsorption, Adsorption, Removal

Al-Degs, Y., Khraisheh, M.A.M., Allen, S.J. and Ahmad, M.N.A. (1999), Adsorption of remazol reactive black B on different types of activated carbon: Adsorption on H and L carbon. *Advances in Environmental Research*, **3** (2), 132-138.

Full Text: [A\Adv Env Res3, 132.pdf](A/Adv%20Env%20Res3,%20132.pdf)

Abstract: Five types of activated carbon were tested to adsorb Remazol Reactive Black B, which is a problematic dye pollutant. The equilibrium adsorption isotherm results showed that three of these carbons, F-400, C207 and EA207, have a high capacity (278, 109 and 96 mg dye/g carbon, respectively). On the other hand, Centaur and Chilean coal had no affinity toward Reactive Black. H+ and OH-capacity, pHZPC and pH(solution) were determined for all the carbons. According to the chemical behaviour, the carbons were categorised as H and L carbons. The carbons with high capacity were of H type, while the ineffective two carbons can be described as L type carbon. The effective carbons showed high pHZPC compared to the ineffective carbons. The adsorption behaviour and the differences in the effectiveness of the carbons for Reactive Black adsorption were attributed to the surface charge developed on the carbon particles at the equilibrium pH. Surface area, iodine value, bulk density and ash content were found to have no relation to the adsorptive capacity.

Keywords: Adsorption, Reactive Dye, H and L Carbons, pHZPC, Aqueous-Solution, Surface-Acidity, Titration

Vaughan, Jr., R.L., Reed, B.E., Viadero, R.C., Jamil, M. and Berg, M. (1999), Simultaneous removal of organic and heavy metal contaminants by granular activated carbon (GAC) columns. *Advances in Environmental Research*, **3** (3), 229-242.

Full Text: [A\Adv Env Res3, 229.pdf](A/Adv%20Env%20Res3,%20229.pdf)

Abstract: A series of pilot-scale granular activated carbon (GAC) column experiments were performed to determine the feasibility of simultaneously removing heavy metal and organic contaminants from waste streams. The following synthetic waste streams were examined: (1) 1 mg/L lead (Pb) only, (2) process water containing diverse anions and cations spiked with 1 mg/L Pb, (3) 1 mg/L Pb and 10 mg/L phenol, and (4) 1 mg/L Pb and 1 mg/L trichloroethylene (TCE). Column breakthrough curves were determined and column performance parameters were calculated. For the Pb-only wastewater, column effectiveness was not strongly dependent on the empty bed contact time (EBCT) or on upstream Pb desorption/resolubilization from the first column in serial column operation. Pb removal decreased by about 50% in the presence of other cations and anions (complex matrix) and was attributed to the column pH being about 1 pH unit lower than the Pb-only experiments. Pb removal was not significantly affected by the presence of phenol; however, due to its amphoteric nature, phenol desorbed at the high pHs encountered during the base rinse portion of the regeneration step and during the initial portion of the treatment run. GAC columns were most effective for treating the Pb-TCE wastewater because TCE did not desorb at high pH values. Four treatment runs with Pb-TCE wastewater were conducted and the base rinse portion of the regeneration scheme was recovered and reused. TCE breakthrough did not occur during any portion of the column experiment.

Keywords: Lead Removal, Regeneration, Activated Carbon, Adsorption, Simultaneous Removal, Organics, Heavy Metals

Lee, C.K., Low, K.S. and Chew, S.L. (1999), Removal of anionic dyes by water hyacinth roots. *Advances in Environmental Research*, **3** (3), 343-351.

Full Text: [A\Adv Env Res3, 343.pdf](A/Adv%20Env%20Res3,%20343.pdf)

Abstract: The potential of the biomass of non-living water hyacinth (*Eichhornia crassipes*) roots as a biosorbent for anionic dyes was investigated. Various parameters affecting the sorption of Acid Blue 25 and Reactive Blue 2 on water hyacinth roots were studied. These include pH, initial dye concentration, temperature, agitation rate and sorbent concentration. Sorption was found to increase as pH decreased and temperature increased. Kinetic studies indicate that both boundary layer and intraparticle diffusion played important roles in the rate of dye removal. Maximum sorption capacities, estimated by fitting experimental data to the Langmuir isotherm, were 107.5 and 58.8 mgg-1 for Acid Blue 25 and Reactive Blue 2, respectively. A continuous flow study shows that there exists a linear relationship between bed depth and service time of the column.

Keywords: Reactive Dyes, Natural Adsorbents, Activated-Carbon, Color Removal, Basic-Dyes, Adsorption, Equilibrium, Effluents, Copper, Husk, Sorption, Acid Dyes, Reactive Dyes, Water Hyacinth Roots, Bioremediation

Chen, J.P. and Peng, J. (2000), Uptake of toxic metal ions by novel calcium alginate beads. *Advances in Environmental Research*, **3** (4), 439-449.

Full Text: [A\Adv Env Res3, 439.pdf](A/Adv%20Env%20Res3,%20439.pdf)

Abstract: In this study, novel calcium alginate beads with relatively small particle sizes were first prepared. The effects of various important factors, such as pH, initial concentration, and presence of EDTA, on metal ion removal capacity and rate were investigated. It was found that copper removal increased dramatically from 7 to 75% in a narrow pH range from 2.5 to 4.0. No significant change in removal was observed from pH 4.0 to 5.5. The maximum metal removal capacities (qmax) for copper and zinc were 115.4 and 70.3 mg/g (1.82 and 1.08 mmol/g) (dry weight), which are higher than those reported for other biosorbents. The uptake of copper was reduced from 75 to 10% when EDTA was added. The Langmuir equation described the equilibrium data well for both copper and zinc. Addition of zinc ions did not affect the removal of copper ions when the copper: zinc concentration ratio was 1: 1.1. Kinetic studies showed that the metal ion removal rate was much faster than for other adsorption/biosorption processes. Most of the copper and zinc ions were removed within 10 minutes and no further removal was observed after 50 minutes. The equilibrium time for the calcium alginate beads was much shorter than that for other adsorbents/biosorbents. It was found that ion exchange was the mechanism for the metal ion removal by the novel calcium alginate beads.

Keywords: Copper, Gel, Adsorption, Equilibrium, Recovery, Novel Calcium Alginate Beads, Copper, Zinc, Removal, Equilibrium, Kinetics, Ion Exchange

Wartelle, L.H. and Marshall, W.E. (2000), Citric acid modified agricultural by-products as copper ion adsorbents. *Advances in Environmental Research*, **4** (1), 1-7.

Full Text: [A\Adv Env Res4, 1.pdf](A/Adv%20Env%20Res4,%201.pdf)

Abstract: Agricultural by-products, base-extracted and reacted with citric acid (CA), were compared to demonstrate their ability to adsorb copper ions (Cu2+) from solution. Soybean hulls exhibited the highest copper ion uptake (1.44 mmol/g) of the 12 biomaterials tested. The by-products with the highest bulk densities (>0.6 g/cm3), namely pecan, black walnut, and English walnut shells, showed the lowest copper ion uptake after citric acid modification. Those materials with a bulk density less than 0.6 cm3/g and a low lignin content had the best potential of becoming ion exchange resins using citric acid modification. There appeared to be a linear inverse relationship between total negative charge and lignin content. Chemical modification of these materials results in a low cost value-added product which can benefit industry. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption, Agricultural By-Products, Citric Acid Modification, Copper

Brown, P., Atly Jefcoat, I., Parrish, D., Gill, S. and Graham, E. (2000), Evaluation of the adsorptive capacity of peanut hull pellets for heavy metals in solution. *Advances in Environmental Research*, **4** (1), 19-29.

Full Text: [A\Adv Env Res4, 19.pdf](A/Adv%20Env%20Res4,%2019.pdf)

Abstract: This study assessed the potential of peanut hull pellets to capture metal ions from wastewater and compared their performance to that of raw peanut hulls and a commercial grade ion-exchange resin. The uptake of Cu2+, Cd2+, Zn2+, and Pb2+ onto these media was investigated using a system of standardized batch adsorbers under steady state and transient rate conditions. The influence of the pelletizing process on the rate of metal ion sorption was evaluated by comparing the rate and extent of metal ion uptake onto peanut hull pellets vs. raw peanut hulls. Although a slight reduction in rate of adsorption was apparent for metal ion adsorption onto the pellets, equilibrium capacity was unaffected. Peanut hull pellets are an effective adsorbent for metal ion removal. Though their capacity is lower than that of commercial grade ion-exchange resins, their low cost makes them an attractive option for the treatment of low-strength metal ion waste streams in once-through fixed bed applications. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption Capacity, Adsorption Isotherms, Low Cost Adsorbents, Heavy Metals, Wastewater Treatment, Peanut Hull Pellets, Peanut Hulls

Papelis, C. (2001), Cation and anion sorption on granite from the Project Shoal Test Area, near Fallon, Nevada, USA. *Advances in Environmental Research*, **5** (2), 151-166.

Full Text: [A\Adv Env Res5, 151.pdf](A/Adv%20Env%20Res5,%20151.pdf)

Abstract: The fate and transport of dissolved contaminants are largely determined by the degree of contaminant interaction with mineral surfaces. Compounds with high sorption affinity for the mineral phases present are retarded compared with groundwater flow. To reduce the uncertainty in modeling the transport of radionuclides and other contaminants at the Project Shoal Underground Test Area, near Fallon, Nevada, USA, a parametric sorption study with three cations (lead, strontium, and cesium) and two anions (selenite and chromate) was conducted. The granite from the Project Shoal Test Area was characterized and used for equilibrium sorption experiments in simple electrolyte matrices and synthetic groundwaters from the test area. Lead displayed a typical cation sorption behavior with fractional uptake increasing with increasing pH. In addition, lead sorption was essentially ionic strength independent, suggesting strong binding and substantial retardation under these conditions. Sorption experiments with strontium could not be performed, because of the high strontium content of the rock. Sorption of cesium was weakly pH dependent, suggesting sorption on cation exchange sites. Chromate and selenite displayed typical anion sorption behavior. For both anions, it appeared as if increased ionic strength resulted in increased fractional uptake. Parameters describing linear and Freundlich isotherms were estimated for a variety of conditions. *Context abstract*: The fate and transport of contaminants dissolved in ground- and surface waters are largely dependent on the degree of contaminant interaction with the mineral surfaces present in the flowpath of the water. The degree of interaction depends on a number of factors including mineral composition, solution composition, pH and temperature. Changes in geochemical conditions may have dramatically different effects on the behavior of different ions. Contaminant transport models using sorption parameters that are outside their range of applicability may, therefore, lead to substantial errors in the prediction of contaminant migration. To minimize the uncertainty in radionuclide migration modeling at the Project Shoal Underground Test Area, near Fallon, Nevada, USA, a parametric sorption study with three cations (lead, strontium and cesium) and two anions (selenite and chromate) was conducted. The results clearly indicate that lead sorption was strongly pH dependent, whereas cesium sorption was almost pH independent. In addition, because of the high strontium content of the granite, strontium, a cation considered reactive in most geochemical environments, appeared to be very mobile. Although the sorption isotherm parameters derived are applicable only to the specific material and ions, this study clearly demonstrates the importance of detailed aquifer characterization studies and experimental studies that quantify the effects of changing geochemical conditions on sorption. (C) 2001 Elsevier Science Ltd. All rights reserved.

Keywords: Sorption, Granite, Lead, Strontium, Cesium, Selenite, Chromate, Isotherms

Zhang, Q. and Chuang, K.T. (2001), Adsorption of organic pollutants from effluents of a Kraft pulp mill on activated carbon and polymer resin. *Advances in Environmental Research*, **5** (3), 251-258.

Full Text: [A\Adv Env Res5, 251.pdf](A/Adv%20Env%20Res5,%20251.pdf)

Abstract: Adsorption of acidic bleach plant effluent on activated carbon and a polymer resin (polystyrene divinylbenzene copolymer) was studied at ambient conditions. The adsorption isotherms can be well described using the Freundlich equation. The pH of the wastewater solution influences significantly the adsorption capacity of activated carbon. The maximum adsorption capacity for total organic carbon (TOC) on both activated carbon and the selected resin was obtained at pH 2. The resin is more effective than activated carbon in color removal from pulp mill effluents. The TOC adsorption capacity of the resin can be fully restored by washing with sodium hydroxide solution. Other factors influencing the adsorption capacity are also discussed. (C) 2001 Elsevier Science Ltd. All rights reserved.

Keywords: Activated Carbon, Resin, Bleach Plant Effluent, Adsorption, Wastewater Treatment, pH, Hemp-Based Pulp, Paper-Industry, Oxidation, Treatability

? Juang, R.S., Wu, F.C. and Tseng, R.L. (2002), Use of chemically modified chitosan beads for sorption and enzyme immobilization. *Advances in Environmental Research*, **6** (2), 171-177.

Full Text: [2002\Adv Env Res6, 171.pdf](2002/Adv%20Env%20Res6,%20171.pdf)

Abstract: The sorption of reactive dye RR222 and Cu(II), as well as the immobilization of acid phosphatase and beta-glucosidase, onto swollen chitosan beads were investigated at 30degreesC. Chitosan was prepared from cuttlefish wastes and was cross-linked with different dosages of glutaraldehyde and glyoxal (100-80 000 mg/l). It was shown that the degree of cross-linking could be well described by the Freundlich equation. The amounts of sorption of solutes and the immobilization capacities of enzymes onto the swollen chitosan beads were significantly affected by the degrees of cross-linking. Activities and lifetimes of the immobilized enzymes were measured to evaluate the potential of practical applications. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Activity, Applications, Aqueous-Solutions, Beads, Beta-Glucosidase, Chemically Modified Chitosan, Chitin, Chitosan, Cross-Linking, Crosslinking, Cupric Ion, Derivatives, Dye, Enzyme, Enzyme Immobilization, Enzymes, Glutaraldehyde, Glyoxal, Immobilization, Ion Adsorption, Lifetime, Metal, Phosphatase, Reactive Dye, Removal, Solute Sorption, Sorption, Tyrosinase, Waste-Water, Wastes

Annadurai, G., Juang, R.S. and Lee, D.J. (2002), Factorial design analysis for adsorption of dye on activated carbon beads incorporated with calcium alginate. *Advances in Environmental Research*, **6** (2), 191-198.

Full Text: [A\Adv Env Res6, 191.pdf](A/Adv%20Env%20Res6,%20191.pdf)

Abstract: Batch adsorption equilibrium of the dye Rhodamine 6G, using activated carbon beads incorporated with calcium alginate (ACCA beads), was studied. The effects of several factors governing the adsorption process., such as dye concentration (100-300 mg/l), pH (7-9), and temperature (30-60degreesC), on percent of adsorption were investigated at a fixed dosage of ACCA beads (1 g/l). High percentages of adsorption of Rhodamine 6G were obtained using ACCA beads. Based on the analysis of variance and the factorial design of experiments, dye concentration was the most significant factor under the experimental ranges examined. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Factorial Design of Experiments, Dye Adsorption, Activated Carbon, Calcium Alginate, Incorporation, Aqueous-Solutions, Equilibrium, Removal, Adsorbents, Dyestuffs, Blue, Cost

Dakiky, M., Khamis, M., Manassra, A. and Mer’eb, M. (2002), Selective adsorption of chromium(VI) in industrial wastewater using low-cost abundantly available adsorbents. *Advances in Environmental Research*, **6** (4), 533-540.

Full Text: [A\Adv Env Res6, 533.pdf](A/Adv%20Env%20Res6,%20533.pdf)

Abstract: The removal of poisonous Cr(VI) from industrial wastewater by different low-cost abundant adsorbents was investigated. Wool, olive cake, sawdust, pine needles, almond shells, cactus leaves and charcoal were used at different adsorbent/metal ion ratios. The influence of pH, contact time, metal concentration, adsorbent nature and concentration on the selectivity and sensitivity of the removal process was investigated. The adsorption process was found to follow a first-order rate mechanism and the rate constant was evaluated at 30 C. In the case of wool, the rate constant was the highest (39.6×10-3 min-1) and the cactus leaves gave the lowest value (6.8×10-3 min-1). Langmuir and Freundlich isotherms were applicable to the adsorption process and their constants were evaluated. The thermodynamic equilibrium constant and the Gibbs free energy were calculated for each system. The DeltaG(o) for the absorption by wool (-2.26 kJ mol-1) and that for the cactus leaves (2.8 kJ mol-1) supported the findings that wool was the best among the selected adsorbents for the selective removal of Cr(VI) at pH 2 and an adsorbent concentration of 16 g l-1 at 30degreesC, for which the removal was 81% out of 100 ppm Cr(VI) after 2 h of stirring. A comparison between a simulated sample containing 100 ppm Cr(VI) and a true wastewater sample containing 100 ppm Cr(VI), 19 ppm Al, 30 ppm Mg, 49 ppm Ca, and 10 ppm B, showed that the adsorption process is satisfactory and selective for Cr(VI). (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Chromium(VI), Adsorption, Adsorption Isotherm, pH Effect, Adsorbent, Thermodynamics, Hexavalent Chromium, Removal, Water, Biosorption, Separation, Samples, Cr(VI)

Al-Subu, M.M. (2002), The interaction effects of cypress (*Cupressus sempervirens*), cinchona (*Eucalyptus longifolia*) and pine (*Pinus* *halepensis*) leaves on their efficiencies for lead removal from aqueous solutions. *Advances in Environmental Research*, **6** (4), 569-576.

Full Text: [A\Adv Env Res6, 569.pdf](A/Adv%20Env%20Res6,%20569.pdf)

Abstract: Batch and isotherm studies were carried out to compare the effectiveness of decaying leaves of cypress (Cupressus sempervirens), cinchona (Eucalyptus longifolia) and pine (Pinus halepensis) to adsorb lead from its aqueous solution and to study the leaf interaction effects. Lead removal increased with increasing concentrations of both lead ions and the plant leaves employed. Removal efficiency of leaves followed the decreasing order: pine > cypress > cinchona. While cinchona leaves showed an antagonistic effect on the removal efficiencies of cypress, pine, and a combination of cypress and pine leaves, the effect of cypress on the removal efficiency of pine leaves was additive. The adsorption of lead by cypress and cinchona leaves was well defined by both the Freundlich and Langmuir isotherms, but only the Freundlich isotherm was adopted for pine leaves. Desorption of lead from leaves upon standing in deionized water was minimal. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Biosorption, Biomass, Remediation, Lead Removal, Adsorption, Cypress, Cinchona, Pine, Decaying Leaves, Sphagnum Moss, Metal-Ions, Cadmium, Recovery, Exposure, Aluminum, Binding, Biomass

Bose, P., Bose, M.A. and Kumar, S. (2002), Critical evaluation of treatment strategies involving adsorption and chelation for wastewater containing copper, zinc and cyanide. *Advances in Environmental Research*, **7** (1), 179-195.

Full Text: [A\Adv Env Res7, 179.pdf](A/Adv%20Env%20Res7,%20179.pdf)

Abstract: Industrial wastewater containing heavy metals and cyanide requires treatment for removal of both metals and cyanide before disposal. Conventional methods for treatment of such wastewater involve alkaline-chlorination for cyanide destruction, followed by pH adjustment for metal precipitation, and subsequent removal of precipitate by solid-liquid separation processes. However, excessive sludge production, slow metal precipitation kinetics, and inefficient metal removal due to poor settling and aggregation of metal precipitates, are major drawbacks of the above process. This has rekindled interest in alternative metal removal strategies involving metal adsorption and metal chelation. The objective of the study described in this paper is to critically evaluate treatment strategies involving some indigenous adsorbents and a low-cost chelating agent for treatment of a simulated wastewater containing copper and zinc, complexed with cyanide. Treatment strategies involving three adsorbents, sulfonated coal, biosorbent G. lucidum, and iron oxide coated sand (IOCS), and a chelating agent, insoluble agro-based starch xanthate (IAX), were tested. The evaluation procedure involved comparison of the performance of these treatment strategies with that of conventional treatment. Results indicate that treatment using the chelating agent IAX has the greatest potential as an alternative to the conventional treatment technique. The three adsorbents tested, although reported to be very effective in removing copper and zinc from pure systems, exhibit diminished metal removal capacity in the presence of cyanide, and hence are unsuitable. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Metal-Cyanide Complexes, Copper, Zinc, Cyanide, Alkaline-Chlorination, Precipitation, Adsorption, Chelation, Heavy-Metal Removal, Oxide-Coated Sand, Insoluble Starch Xanthate, Activated Carbon, Aqueous-Solution, Biosorption, Sorption, Recovery, Cadmium(II), Sludges

Fu, Y. and Viraraghavan, T. (2002), Removal of Congo red from an aqueous solution by fungus *Aspergillus Niger*. *Advances in Environmental Research*, **7** (1), 239-247.

Full Text: [A\Adv Env Res7, 239.pdf](A/Adv%20Env%20Res7,%20239.pdf)

Abstract: Biosorption is becoming a promising alternative to replace or supplement the present dye removal processes from dye wastewater. In this study, removal of an anionic disazo direct dye, Congo Red, from an aqueous solution by biosorption on dead fungus, *Aspergillus Niger*, was investigated. Pretreatment with NaHCO3 was found to be the most effective with a biosorption capacity of 14.72 mg/g compared with 12.10 mg/g of living biomass for Congo Red. Batch pH, kinetic and isotherm studies were conducted to evaluate the biosorption capacity of NaHCO3 pretreated biomass. The initial pH of the dye solution strongly affected the chemistry of both the dye molecules and fungal biomass in an aqueous solution. The effective pH was 6.0. Kinetic studies showed that the biosorption of Congo Red on fungal biomass was a gradual process. Equilibrium was reached in 42 h. The kinetic studies indicated that Lagergren first order and Ho et al. pseudo second order rate equations were able to provide a realistic description of biosorption kinetics of Congo Red. Isotherm studies indicated that biosorption of Congo Red on *A. Niger* biomass did not follow the Langmuir, Freundlich and BET models, but followed the Radke–Prausnitz model. The adsorption capacities for granular activated carbon and powdered activated carbon were 13.80 and 16.81 mg/g, respectively, compared with an adsorption capacity of 14.16 mg/g for fungal biomass. This study showed that it is possible to develop systems for dye removal using *A. Niger* biomass which occurs as a byproduct in waste streams of fermentation industries.

Keywords: *Aspergillus Niger*, Congo Red, Biosorption

Yabe, M.J.S. and de Oliveira, E. (2003), Heavy metals removal in industrial effluents by sequential adsorbent treatment. *Advances in Environmental Research*, **7** (2), 263-272.

Full Text: [2003\Adv Env Res7, 263.pdf](2003/Adv%20Env%20Res7,%20263.pdf)

Abstract: A method for metal removal can be applied to industrial wastes without prior treatment using solid adsorbents such as sand, silica, coal and alumina. This study was conducted to evaluate the removal of heavy metals in an aquatic system without prior treatment. An important aspect of the proposed method was that the removal was performed on several metals at a pH range in which a given metal undergoes an adsorption process, making the method useful for wastewater treatment. Lead was the metal of most interest due to its occurrence in waste from storage-battery manufacture. After the adsorption process, the Pb concentration, as well as that of Cd, Ni, Cr and Cu, were below the detection limit. For other metals, removal was observed to be approximately 20–30% for Ca, Mg and Mn and above 80% for Cr, Pb, Ni, Cd and Cu, using alumina as an absorbent.

Keywords: Heavy Metal, Industrial Effluent, Metal Removal, Adsorption, Alumina, Silica, Coal, ICP-AES

Goyal, N., Jain, S.C. and Banerjee, U.C. (2003), Comparative studies on the microbial adsorption of heavy metals. *Advances in Environmental Research*, **7** (2), 311-319.

Full Text: [A\Adv Env Res7, 311.pdf](A/Adv%20Env%20Res7,%20311.pdf)

Abstract: A process of competitive biosorption of Cr(VI) and Fe(III) ions on Streptococcus equisimilis, Saccharomyces cerevisiae and *Aspergillus Niger* is described and compared to single metal ion adsorption in solution. The ability of these three microorganisms to adsorb metal ions [Cr(VI) and Fe(III)], is shown as a function of metal concentration, pH, temperature, growth medium composition, culture age and contact time with the biosorbents. The effect of addition of an extra energy source in the form of glucose, fructose and sucrose in the adsorption medium is studied for the biosorption of metal ions by microorganisms. Freundlich constants are determined from the Freundlich adsorption isotherms for all the organisms. The adsorbed metals from the sorbents can be regenerated in situ with 0.1 M sodium hydroxide.

Keywords: Biosorption, Streptococcus Equisimilis, *Saccharomyces Cerevisiae*, *Aspergillus Niger*, Biosorbents, Freundlich Constants, Isotherms

Kadirvelu, K. and Namasivayam, C. (2003), Activated carbon from coconut coirpith as metal adsorbent: Adsorption of Cd(II) from aqueous solution. *Advances in Environmental Research*, **7** (2), 471-478.

Full Text: [A\Adv Env Res7, 471.pdf](A/Adv%20Env%20Res7,%20471.pdf)

Abstract: Activated carbon prepared from coirpith, an agricultural solid waste by-product, has been used for the adsorption of Cd(II) from aqueous solution. Parameters such as the agitation time, metal ion concentration, adsorbent dose and pH were studied. The adsorption data fit well with the Langmuir and Freundlich isotherm models. The adsorption capacity (Q(0)) calculated from the Langmuir isotherm was 93.4 mg Cd(II)/g at an initial pH of 5.0 at 30°C for the particle size 250-500 μm. The percent removal increased with pH from 2 to 4 and remained constant up to pH 10. Desorption studies were performed with dilute hydrochloric acid. Quantitative recovery of the metal ion is possible. The mechanism of adsorption seems to be ion exchange. As coirpith is discarded as waste from coir processing industries, the carbon is expected to be an economical product for metal ion remediation from water and wastewater. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Coirpith Carbon, Cd(II) Adsorption, Kinetics, Isotherms, pH, Desorption, Waste-Water, By-Product, Heavy-Metals, Cadmium, Removal, Copper, Equilibrium, Sorption, Zinc, Ions

Annadurai, G., Juang, R.S., Yen, P.S. and Lee, D.J. (2003), Use of thermally treated waste biological sludge as dye absorbent. *Advances in Environmental Research*, **7** (3), 739-744.

Full Text: [A\Adv Env Res7, 739.pdf](A/Adv%20Env%20Res7,%20739.pdf)

Abstract: The capacity of adsorbent recycled from microwave thermal treatment to remove a synthetic dye, Rhodamine 6G, from a water bath, was examined. The acidified, dewatered sludge was microwave heated for 1–4 min. Batch adsorption tests were conducted on this sludge at various pH values and solution temperatures. Equilibrium of dye adsorption was obtained in 30 h. Three kinetic models - pseudo first-order, pseudo second-order and intra-particle diffusion - were applied to elucidate the adsorption kinetic data. Experimental results indicate that higher adsorption efficiency could be derived at higher pH/temperature levels. Moreover, the sample treated for 1 min by microwaves adsorbed more dye than did the sample so treated for 4 min. Sludge samples were also characterized to interpret the experimental findings. Energy cost analysis demonstrated the feasibility of the present microwave process.

Keywords: Dye Removal, Absorbent, Microwave Treatment, Kinetics

Notes: highly cited

? Gogate, P.R. and Pandit, A.B. (2004), A review of imperative technologies for wastewater treatment. I: Oxidation technologies at ambient conditions. *Advances in Environmental Research*, **8** (3-4), 501-551.

Full Text: [2004\Adv Env Res8, 501.pdf](2004/Adv%20Env%20Res8,%20501.pdf)

Abstract: Nowadays, due to the increasing presence of molecules, refractory to the microorganisms in the wastewater streams, the conventional biological methods cannot be used for complete treatment of the effluent and hence, introduction of newer technologies to degrade these refractory molecules into smaller molecules, which can be further oxidized by biological methods, has become imperative. The present work aims at highlighting five different oxidation processes operating at ambient conditions viz. cavitation, photocatalytic oxidation, Fenton’s chemistry (belonging to the class of advanced oxidation processes) and ozonation, use of hydrogen peroxide (belonging to the class of chemical oxidation technologies). The work highlights the basics of these individual processes including the optimum operating parameters and the reactor design aspects with a complete overview of the various applications to wastewater treatment in the recent years. In the next article of this two article series on imperative technologies, hybrid methods (basically combination of the oxidation processes) will be discussed and the current work forms a useful foundation for the work focusing on hybrid technologies. (C) 2003 Elsevier Ltd. All rights reserved.

Keywords: Wastewater Treatment, Cavitation, Photocatalysis, Ozonation, Hydrogen Peroxide, Fenton’s Chemistry, Optimum Treatment Conditions, Aqueous TiO2 Suspensions, Ozone-Hydrogen-Peroxide, Containing Organic-Compounds, Photo-Fenton Method, Heterogeneous Photocatalytic Oxidation, Polynuclear Aromatic-Hydrocarbons, Titanium-Dioxide Suspensions, Wet Air Oxidation, Tert-Butyl Ether, Ultrasonic Irradiation

Notes: highly cited

? Gogate, P.R. and Pandit, A.B. (2004), A review of imperative technologies for wastewater treatment. II: Hybrid methods. *Advances in Environmental Research*, **8** (3-4), 553-597.

Full Text: [2004\Adv Env Res8, 553.pdf](2004/Adv%20Env%20Res8,%20553.pdf)

Abstract: In the first part of this two article series on the imperative technologies for wastewater treatment, a review of oxidation processes operating at ambient conditions was presented. It has been observed that none of the methods can be used individually in wastewater treatment applications with good economics and high degree of energy efficiency. Moreover, the knowledge required for the large-scale design and application is perhaps lacking. In the present work, an overview of hybrid methods (the majority are a combination of advanced oxidation processes) has been presented. Hybrid methods viz Ultrasound/H2O2, or ozone, UV/H2O2 or ozone, Ozone/H2O2, Sono-photochemical oxidation, Photo-Fenton processes, catalytic advanced oxidation processes, use of advanced oxidation processes in conjunction with biological oxidation, SONIWO (sonochemical degradation followed by wet air oxidation), and CAV-OX have been discussed with specific reference to the principles behind the expected synergism, different reactor configurations used and optimum considerations for the operating and geometric parameters. An overview of different chemicals degraded has been presented. Some of the important works evaluating the application of these processes to real effluents have been described in detail. Some guidelines for the future work required to facilitate efficient large-scale operation have been given. A model effluent treatment scheme based on the various techniques discussed in the present work has been presented. (C) 2003 Elsevier Ltd. All rights reserved.

Keywords: Hybrid Methods, Wastewater Treatment, Ultrasound/H2O2 or Ozone, UV/H2O2 or Ozone, Ozone/H2O2, Sonophotochemical Oxidation, Photo-Fenton Processes, Catalytic Advanced Oxidation Processes, Use of Advanced Oxidation Processes in, Conjunction With Biological Oxidation, Sonication Followed by Wet Air Oxidation (SNIWO), Cavitation Oxidation Process (CAVOX), Advanced Oxidation Processes, Ozone-Hydrogen-Peroxide, Tert-Butyl Ether, Manganese-Catalyzed Ozonation, Polynuclear Aromatic-Hydrocarbons, Enhanced Reductive Degradation, Photoassisted Fenton Reaction, Natural Organic-Matter, Oxalic-Acid Ozonation, Aqueous-Solution

Norton, L., Baskaran, K. and McKenzie, T. (2004), Biosorption of zinc from aqueous solutions using biosolids. *Advances in Environmental Research*, **8** (3-4), 629-635.

Full Text: [A\Adv Env Res8, 629.pdf](A/Adv%20Env%20Res8,%20629.pdf)

Abstract: The potential to remove zinc from aqueous solutions through biosorption using biosolids was investigated. Batch experimental results showed that the biosorptive capacity of dry, unground biosolids was 0.564 mM/(g dry biosolids). Pretreatment of the biosolids, including drying and grinding, affected the sorptive potential of the biomass. Kinetic experiments showed that dilute zinc solutions reached equilibrium within 5 h, whereas equilibrium was not reached until 24 h for more concentrated solutions. The biosorptive capacities were dependent on zinc solution pH, with pH 4 being optimal. Infrared spectra analysis suggested that carboxyl functional groups are responsible for zinc uptake.

Keywords: Biosorption, Heavy Metal Removal, Wastewater, Zinc, Biosolids

# Title: Advances in Enzyme Regulation

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Biochemistry & Molecular Biology: Impact Factor 2.273, 132/310 (2000)

Head, J.F., Wang, F. and Elliott, R.L. (1997), Antineoplastic drugs that interfere with iron metabolism in cancer cells. *Advances in Enzyme Regulation*, **37**, 147-169.

Full Text: [A\Adv Enz Reg37, 147.pdf](A/Adv%20Enz%20Reg37,%20147.pdf)

Keywords: Phase-II-Trial, Gynecologic-Oncology-Group, Leukemic Hl60 Cells, Brain-Tumor Cells, Gallium Nitrate, Ribonucleotide Reductase, Transferrin-Gallium, Continuous Infusion, Malignant-Lymphoma, In-Vitro

# Title: Advances in Enzymology and Related Subjects of Biochemistry

Full Journal Title: Advances in Enzymology and Related Subjects of Biochemistry

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Monod, J. and Cohn, M. (1952), La biosynthese induite des enzymes - Adaptation enzymatique. *Advances in Enzymology and Related Subjects of Biochemistry*, **13**, 67-119.

# Title: Advances in Experimental Medicine and Biology

Full Journal Title: Advances in Experimental Medicine and Biology

ISO Abbreviated Title: Adv.Exp.Med.Biol.

JCR Abbreviated Title: Adv Exp Med Biol

ISSN: 0065-2598

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Kluwer Academic/Plenum Publ

Publisher Address: 233 Spring St, New York, NY 10013

Subject Categories:

Medicine, Research & Experimental: Impact Factor

? Vogel, C, Schuhmacher, U.S., Degen, G.H., Goebel, C. and Abel, J. (1997), Differential effects of 2,3,7,8-tetrachlorodibenzo-*p-dioxin* on the expression of prostaglandin-H synthase isoenzymes in mouse tissues. *Advances in Experimental Medicine and Biology*, **433**, 139-143.

Keywords: AH Receptor, Gene, Oxidation, Mice

# Title: Advances in Gerontology

Full Journal Title: Advances in Gerontology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Anisimov, V.N. (2007), [Ten year jubilee of the journal “Advances in Gerontology”]. *Advances in Gerontology*, **20** (4), 9-15.

Abstract: The article presents the report of the editorial board of the journal “Advances in Gerontology” devoted to 10th anniversary since the first publication. Analysis of character of the articles printed during last 5 years has been given, including their distribution by geography, departmental membership, and science themes. Geographic widening of the publications, increasing of number of institutions delivering the articles and of number of articles as well as number of the authors has been shown. These showings are the evidence of the fact that gerontology attracts more and more attention of the specialists.

Keywords: Evidence, First, Gerontology, Institutions, Journal, Publication, Publications, Science

# Title: Advances in Knowledge Discovery and Data Mining, Proceedings

Full Journal Title: Advances in Knowledge Discovery and Data Mining, Proceedings

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Qian, T.Y., Srivastava, J., Peng, Z.Y. and Sheu, P.C.Y. (2009), Simultaneously finding fundamental articles and new topics using a community tracking method. *Advances in Knowledge Discovery and Data Mining, Proceedings*, **5476**, 796-803.

Abstract: In this paper, we study the relationship between fundamental articles and new topics and present a new method to detect recently formed topics and its typical articles simultaneously. Based on community partition, the proposed method first identifies the emergence of a new theme by tracking the change of the community where the top cited nodes lie. Next, the paper with a high citation number belonging to this new topic is recognized as a fundamental article. Experimental results on real dataset show that our method can detect new topics with only a subset of data in a timely manner, and the identified papers for these topics are found to have a long lifespan and keep receiving citations in the future.

Keywords: Citation, Citations, Community Tracking, Fundamental Article Finding, New Topic Identification

# Title: Advances in Management of Technology

Full Journal Title: Advances in Management of Technology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Wang, J. and Huang, L.C. (2008), The future of the technology management: Intelligent management. *Advances in Management of Technology, Pt 1*, 318-322.

Abstract: Technology is very important for both enterprises and organizations. Products and services are often on the base of the technology and technology is used in manufacturing, administration, sales, distribution etc. Research has shown a clear correlation between investment in technological development and competitive performance. Enterprises and organizations are putting more money into the technology, how to use a set of methods and tools to manage the technology is becoming more important. This paper presents some definitions of technology management, defines the technology management tool, lists some technology management tools and distinguishes between the technology management method and technology management tool. Technology management methods, which are based on data, are programs, rules and projects; together with technology management tools, it can solve the problem of the technology development and technology application. From bibliometrics to computer, this article also summarily describes the evolution of technology management method. Technology management is a complex process, which includes a lot of different qualitative and quantitative analysis. An effective technology management system contains a set of methods and tools; it must solve two key questions. At last, the paper has discussed the future of the technology management, focusing specifically on two technical problems: intelligence and integration.

Keywords: Bibliometrics, Development, Integration, Intelligence, Management, Quantitative Analysis, Research, System, Technology, Technology Management Method, Technology Management Tool, Tools

? Deng, B., Shao, P.J. and Zhao, D. (2008), Analysis on the current situations of data mining pplications in the telecommunications industry in China (2000-2007). *Advances in Management of Technology, Pt 2*, 728-732.

Abstract: Data mining is increasingly popular because of the substantial contribution it can make. In China, many scholars pay more attention to the effective application-oriented data mining research. This study reviews the relevant literatures on data mining applications in the telecommunications industry from 2000 to 2007 in China. With the method of bibliometric analysis makes a statistical analysis on literatures from the perspectives of time distribution, research methods, research topics, and research techniques. This paper concludes data mining in the telecommunications industry research topics and applies research characteristic in China. With the overseas research situation contrast, this paper makes some suggestions on the improvement of data mining applications in China.

Keywords: Bibliometric, Bibliometric Analysis, Data Mining, Research, Research Topics, Retention, Telecommunications Industry

# Title: Advances in Microbial Ecology

Full Journal Title: Advances in Microbial Ecology

ISO Abbreviated Title: Adv. Microb. Ecol.

JCR Abbreviated Title: Adv Microb Ecol

ISSN: 0147-4863

Issues/Year: 1

Journal Country/Territory: United States

Language: English

Publisher: Kluwer Academic/Plenum Publ

Publisher Address: 233 Spring St, New York, NY 10013

Subject Categories:

Ecology: Impact Factor 1.000, / (2001)

Microbiology: Impact Factor 1.000, / (2001)

? Poindexter, J.S. (1981), Oligotrophy: Fast and famine existence. *Advances in Microbial Ecology*, **5**, 63-89.

# Title: Advances in Neural Information Processing Systems 13

Full Journal Title: Advances in Neural Information Processing Systems 13

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? ? Cohn, D. and Hofmann, T. (2001), The missing link - A probabilistic model of document content and hypertext connectivity. *Advances in Neural Information Processing Systems 13*, **13**, 430-436.

Abstract: We describe a joint probabilistic model for modeling the contents and inter-connectivity of document collections such as sets of web pages or research paper archives. The model is based on a probabilistic factor decomposition and allows identifying principal topics of the collection as well as authoritative documents within those topics. Furthermore, the relationships between topics is mapped out in order to build a predictive model of link content. Among the many applications of this approach are information retrieval and search, topic identification, query disambiguation, focused web crawling, web authoring, and bibliometric analysis.

Keywords: Bibliometric, Bibliometric Analysis, Information Retrieval, Research

# Title: Advances in Neurology

Full Journal Title: Advances in Neurology

ISO Abbreviated Title: Adv. Neurol.

JCR Abbreviated Title: Adv Neurol

ISSN: 0091-3952

Issues/Year: 1

Journal Country/Territory: United States

Language: English

Publisher: Lippincott Williams & Wilkins

Publisher Address: 530 Walnut St, Philadelphia, PA 19106-3621

Subject Categories:

Clinical Neurology: Impact Factor 1.142, 69/136 (2001)

Neurosciences: Impact Factor 1.142, 136/198 (2001)

? Cummings, J.L. (1983), Treatable dementias. *Advances in Neurology*, **38**, 165-183.

Abstract: Dementia, a syndrome of acquired intellectual deterioration, is an etiologically nonspecific condition that can be permanent or reversible. When evaluating demented patients, a careful exposure history will determine the possible role of drugs, metals, or toxins. Physical examination may reveal focal deficits in cases of intracranial mass lesions and spasticity or ataxia of the lower limbs if hydrocephalus is present. Coexistence of dementia and a peripheral neuropathy usually indicates the existence of a toxic or metabolic disorder. Depressed mood, sleep disturbance, anorexia, impotence, constipation, and psychomotor retardation indicate the presence of a depressive syndrome. Asterixis, myoclonus, and postural tremor are common in toxic-metabolic dementias, whereas resting tremor, choreoathetosis, or rigidity occur in progressive extrapyramidal disorder. EEG is focally abnormal in cases of cerebral mass lesions and shows generalized slowing in toxic-metabolic encephalopathies. CT will aid in the identification of hydrocephalus, subdural hematomas, and intracranial mass lesions. A thorough laboratory evaluation including complete blood count, erythrocyte sedimentation rate, electrolytes, blood urea nitrogen and blood sugar, liver and thyroid function tests, serum calcium and phosphorus levels, B12 and folate levels, serum copper and ceruloplasmin, VDRL, chest X-ray, electrocardiogram, and lumbar puncture may demonstrate treatable disorders that are adversely affecting intellectual function. Elderly individuals are particularly susceptible to the effects of toxic or metabolic disorders, and a mild dementia may be exaggerated by relatively minor fluctuations in metabolic status. Treatable causes of dementia should be sought in all demented patients.

# Title: Advances in Physiology Education

Full Journal Title: [Advances in Physiology Education](http://advan.physiology.org/contents-by-date.0.shtml)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Benos, D.J., Fabres, J., Farmer, J., Gutierrez, J.P., Hennessy, K., Kosek, D., Lee, J.H., Olteanu, D., Russell, T., Shaikh, F. and Wang, K. (2005), Ethics and scientific publication. *Advances in Physiology Education*, **29** (2), 59-74.

Full Text: [2005\Adv Phy Edu29, 59.pdf](2005/Adv%20Phy%20Edu29,%2059.pdf)

Abstract: This article summarizes the major categories of ethical violations encountered during submission, review, and publication of scientific articles. We discuss data fabrication and falsification, plagiarism, redundant and duplicate publication, conflict of interest, authorship, animal and human welfare, and reviewer responsibility. In each section, pertinent historical background and citation of relevant regulations and statutes are provided. Furthermore, a specific case(s) derived from actual situations is (are) presented. These cases were chosen to highlight the complexities that investigators and journals must face when dealing with ethical issues. A series of discussion questions follow each case. It is our hope that by increasing education and awareness of ethical matters relevant to scientific investigation and publication, deviations from appropriate conduct will be reduced.

Keywords: Plagiarism, Redundant, Falsification, Conflict of Interest, Fabrication, Conflicts-of-Interest, Duplicate Publication, Authorship, Impact

# Title: Advances in Psychological Science

Full Journal Title: [Advances in Psychological Science](http://e45.cnki.net/KNS50/Navi/item.aspx?NaviID=1&BaseID=XLXD&NaviLink=%e5%bf%83%e7%90%86%e7%a7%91%e5%ad%a6%e8%bf%9b%e5%b1%95)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Liu, Z.Y. and Li, L.Y. (2007), Quantitative analysis on literatures of self-disclosure in SSCI. *Advances in Psychological Science*, **15** (3), 476-481.

Full Text: [2007\Adv Psy Sci15, 476.pdf](2007/Adv%20Psy%20Sci15,%20476.pdf)

Abstract: Based on bibliometric approach, the authors make a statistical analysis of the literatures on self-disclosure from 1975 to 2005 in SSCI, and reveal the main subject areas, sources, researchers and development trends in this specific research area, especially those of the 38 domestic academic papers by experts from Hongkong, Taiwan and China mainland, which focus on the influence of Chinese culture and on some similar hot issues, research subjects, and methods compared with the foreign studies. From the perspec...

Keywords: Self-Disclosure, SSCI, Bibliometric Analysis

# Title: Advances in Water Resources

Full Journal Title: [Advances in Water Resources](http://www.sciencedirect.com/science/journal/03091708)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Allen-King, R.M., Grathwohl, P. and Ball, W.P. (2002), New modeling paradigms for the sorption of hydrophobic organic chemicals to heterogeneous carbonaceous matter in soils, sediments, and rocks. *Advances in Water Resources*, **25** (8-12), 985-1016.

Full Text: [2002\Adv Wat Res25, 985.pdf](2002/Adv%20Wat%20Res25,%20985.pdf)

Abstract: Heterogeneity in naturally occurring carbonaccous materials (CMs) causes sorbed hydrophobic organic compound (HOC) concentrations in soils, sediments, and rocks to occur as a combination of surface adsorption and phase partitioning, with the latter typically more linearly dependent on aqueous concentration. In this manuscript, we describe a model to simulate HOC sorption as the combined effect of adsorption to thermally altered CM and a more linear solvation-driven absorption into gel-like CM (organic matter). We describe different forms of thermally altered CM (such as soots, chars, coals, and kerogen), the manner in which these materials can serve as especially strong adsorbents, and the conditions under which they can control solid-aqeous distribution. Specific examples of model fits to soil, sediment and rock samples with identified thermally altered CM components provide a linkage between sorption components and sorbent material properties. Because both the adsorption and partition components are scalable by compound solubility, it may often be possible to estimate nonlinear isotherms for a wide range of chemicals based on comparatively few experimental measurements. Thermally altered CM is widespread in the environment and can serve as an important sorbent even when present in small quantities (especially at low concentrations of adsorbates). In this context, the sorption modeling refinements described in this work are expected to have wide applicability. Given that solid/water distribution is a central process affecting contaminant fate, such refined models are an essential element for better estimates of risk and improved remediation design. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption, Aquifer Material, Black Carbon, Chlorinated-Solvent Sorption, Competitive Sorption, Deep-Sea Sediments, Desorption, Desorption-Kinetics, Distributed Reactivity Model, Dubinin-Polanyi Equations, HOC, Hydrophobic Organic Compound, Isotherms, Long-Term Sorption, Nonlinear Sorption, Partitioning, Polycyclic Aromatic-Hydrocarbons, Pore Filling, Remediation, Sorption, Sorption, Desorption Kinetics

? Wissmeler, L. and Barry, D.A. (2008), Reactive transport in unsaturated soil: Comprehensive modelling of the dynamic spatial and temporal mass balance of water and chemical components. *Advances in Water Resources*, **31** (5), 858-875.

Full Text: [2008\Adv Wat Res31, 858.pdf](2008/Adv%20Wat%20Res31,%20858.pdf)

Abstract: By implementing the moisture-based form of Richards’ equation into the geochemical modelling framework PHREEQC, a generic tool for the simulation of one-dimensional flow and solute transport in the vadose zone undergoing complex geochemical reactions was developed. A second-order, cell-centred, explicit finite difference scheme was employed for the numerical solution of the partial differential equations of flow and transport. In this scheme, the charge-balanced soil solution is treated as an assembly of elements, where changes in water and solute contents result from fluxes of elements across cell boundaries. Therefore, water flow is considered in terms of oxygen and hydrogen transport. The direct implementation into the geochemical framework provides access to the full set of reactions available in PHREEQC, giving capabilities beyond existing software for unsaturated flow and reaction. Possible reactions include complex aqueous speciation, cation exchange, equilibrium phase dissolution and precipitation, formation of solid solutions, redox reactions, gas phase exchange, surface adsorption considering electrostatics and kinetic reactions with user-defined rate equations, among others. Geochemical reactions were coupled to transport processes by non-iterative sequential operator splitting. The scheme is currently limited to cases where changes in physical fluid properties and hydraulic flow characteristics due to geochemical reactions are negligible. Results from extensive code verification with analytical and accurate numerical solutions as well as HYDRUS-1 D show the excellent performance of the scheme for a variety of hydraulic models including the Brooks and Corey model and the van Genuchten model. High accuracy was gained by the use of integrated diffusivities in the finite difference formulation. The integration of complex geochemical reactions was verified with HP1 by simulating the infiltration of a hyperalkaline solution into a clay soil involving aqueous speciation, equilibrium and kinetic phase dissolution/precipitation and cation exchange reactions. The novel capability of the scheme to account for the influence of geochemical reactions on water contents was demonstrated by comparing reactive and non-reactive transport under transient flow conditions. The simulation of surface complexation according to the diffuse double layer model with an explicit calculation of the ion composition in the diffuse layer in transient unsaturated flow conditions, as shown, represents an additional advance in vadose zone modelling. (C) 2008 Elsevier Ltd. All rights reserved.

Keywords: Access, Adsorption, Assembly, Cation, Cation Exchange, Changes, Clay, Complexation, Dissolution, Equation, Equilibrium, Finite Difference, Framework, Geochemical Modelling, Groundwater, Hydraulic-Conductivity, Hydrogen, Integration, Ion-Binding, Kinetic, Mixing Cell Models, Model, Modelling, Models, Multicomponent Transport, Partial Differential Equations, Phreeqc, Porous-Media Flow, Reactive Transport, Rights, Simulation, Soil, Soil Solution, Solution, Speciation, Split-Operator Methods, Surface Complexation, Systems, Transient, Transport, Unsaturated Flow, Vadose Zone, Water

# Title: Aerosol Science and Technology

Full Journal Title: [Aerosol Science and Technology](http://taylorandfrancis.metapress.com/app/home/journal.asp?wasp=3aa8lumvwh2up8x2kyb0&referrer=parent&backto=linkingpublicationresults,1,1)

ISO Abbreviated Title: Aerosol Sci. Technol.

JCR Abbreviated Title: Aerosol Sci Tech

ISSN: 0278-6826

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Taylor & Francis Inc

Publisher Address: 325 Chestnut St, Suite 800, Philadelphia, PA 19106

Subject Categories:

Engineering, Mechanical: Impact Factor 1.329, 6/102 (2001)

Environmental Sciences: Impact Factor 1.082, 43/126 (1999); Impact Factor 1.049, 51/127 (2000); Impact Factor 1.329, 33/129 (2001)

? Lin, W.Y., Sethi, V. and Biswas, P. (1992), Multicomponent aerosol dynamics of the Pb-O2 system in a bench scale flame incinerator. *Aerosol Science and Technology*, **17** (2), 119-133.

Full Text: [1992\Aer Sci Tec17, 119.pdf](1992/Aer%20Sci%20Tec17,%20119.pdf)

Abstract: A study was carried out to understand the formation and growth of lead particles in a flame incinerator. A bench scale flame incinerator was used to perform controlled experiments with lead acetate as a test compound. A dilution probe in conjunction with real-time aerosol instruments was used to measure the evolution of the particle size distribution at different locations in the flame region. A multicomponent lognormal aerosol model is developed accounting for the chemistry of the lead-oxygen system, and various aerosol dynamic phenomena such as nucleation, coagulation, and condensation. Reasonable agreement is obtained between the predictions of the model using appropriate kinetic parameters and the experimental results.

Keywords: Hazardous-Waste, Size Distributions, Coagulation, Emissions, Particles

Kelly, W.P. and Mcmurry, P.H. (1992), Measurement of particle density by inertial classification of differential mobility analyzer generated monodisperse aerosols. *Aerosol Science and Technology*, **17** (3), 199-212.

Full Text: [1992\Aer Sci Tec17, 199.pdf](1992/Aer%20Sci%20Tec17,%20199.pdf)

Abstract: A density measurement technique based on the selection of a monodisperse aerosol with a differential mobility analyzer followed by classification according to aerodynamic diameter with an impactor has been designed and tested. Experimental results were obtained for several laboratory aerosols (dioctyl phthalate, (NH4)2SO4, NaCl, and H2SO4 at a range of humidities) by using four different microorifice uniform deposit impactor stages with aerodynamic diameter cut-offs of 0.12-0.56 µm. The average error in measured particle densities is 4% and a maximum error of 8% is observed for all of the materials tested except NaCl, for which the measured effective density is 14% smaller than the true density. The discrepancy for NaCl is attributed to nonspherical particle shape. The system will be applied in the future to measure the densities of submicrometer atmospheric particles.

Keywords: Deposit Impactor Moudi, Optical-Properties, Calibration, Range, Sizer

Davis, S.B., Gale, T.K. and Wendt, J.O.L. (2000), Competition for sodium and toxic metals capture on sorbents. *Aerosol Science and Technology*, **32** (2), 142-151.

Full Text: [A\Aer Sci Tec32, 142.pdf](A/Aer%20Sci%20Tec32,%20142.pdf)

Abstract: The removal of toxic heavy metals by sorbents has been the focus of much recent research. In single metal/single sorbent systems, laboratory experiments have demonstrated capture of lead and cadmium by kaolinite and lime at high temperatures. However, practical systems (i.e., pulverized coal fired boilers) generally involve sodium as well as toxic metals and the amount of sodium usually exceeds that of the toxic metals. The purpose of this paper is to explore the effect of sodium on the capture of lead and cadmium by sorbents.

Experiments were conducted in a 16 kW, 0.15 m ID, 6 m tall laboratory downflow furnace. Aqueous solutions of toxic metals and metal/sodium pairs were introduced into the furnace through a natural gas flame via atomization and subsequent vaporization. For all experiments, the total metal/sorbent equivalence ratio was maintained at 0.7. Approximately 0.5 g/min of lime or kaolinite ponder (mean particle diameter congruent to 1.4 μm) was injected along the furnace centerline in the post dame at a temperature of 1500 K. Further downstream, at 1200 K, particulate samples were isokinetically extracted and size segregated in a Berner low pressure impactor. Experimental results showed that cadmium and sodium were captured by lime. Furthermore, cadmium, vas captured by lime preferentially over sodium. Lead capture by lime occurred at a much slower rate than that for cadmium or sodium. Kaolinite, on the other hand, showed a preference for lead and sodium capture over cadmium. Consequently, for capture of multiple metals, a sorbent mixture of lime and kaolinite might be more effective than a single sorbent.

Keywords: Swirl Flame Incinerator, Hydrated Lime, Removal, Mechanism, Sorption, Cadmium, Lead

Babich, P., Wang, P.Y., Allen, G., Sioutas, C. and Koutrakis, P. (2000), Development and evaluation of a continuous ambient PM2.5 mass monitor. *Aerosol Science and Technology*, **32** (4), 309-324.

Full Text: [A\Aer Sci Tec32, 309.pdf](A/Aer%20Sci%20Tec32,%20309.pdf)

Abstract: A Continuous Ambient Mass Monitor (CAMM) for fine particle mass (PM2.5) has recently been developed at the Harvard School of Public Health. The principle of this method is based on the measurement of the increase in pressure drop across a membrane filter (Fluoropore (TM)) during particle sampling, The monitor consists of a conventional impactor/inlet to remove particles larger than 2.5 µm, a diffusion dryer to remove particle-bound water, a filter tape to collect particles, a filter tape transportation system to allow unassisted sampling, and a data acquisition and control unit. For each sampling period (typically 30-60 min), a new segment of the filter tape is exposed so that particles remain close to equilibrium with the sample air during their collection. This results in minimization of volatilization and adsorption artifacts during sampling. Furthermore, since the required how rate for the fine particle mass monitoring channel is only 0.3 L/min, the relative humidity of the air sample can be easily reduced to 40% or less using a Nafion (TM) diffusion dryer to remove particle-bound water, The CAMM has a detection limit of < 5 µg/m3 for PM2.5 concentrations averaged over 1 h. The performance of the newly developed monitor was investigated through laboratory and field studies. Laboratory tests included a calibration of the CAMM using polystyrene latex (PSL) and silica particles. A series of field studies were conducted in 7 cities with presumably different PM2.5 chemical composition. The 24 1-h CAMM measurements were averaged and compared to Harvard Impactor (HI) 24 h PM2.5 integrated measurements, Based on 211 valid sampling days, the measurements obtained from the Harvard Impactor and the CAMM were highly correlated (r2 = 0.90). The average CAMM-to-HI concentration ratio was 1.07 (±0.18).

Keywords: Hepa Filters, Particle, Humidity, Quality, System, Indoor

Lepri, L., Del Bubba, M., Masi, F., Udisti, R. and Cini, R. (2000), Particle size distribution of organic compounds in aqueous aerosols collected from above sewage aeration tanks. *Aerosol Science and Technology*, **32** (5), 404-420.

Full Text: [A\Aer Sci Tec32, 404.pdf](A/Aer%20Sci%20Tec32,%20404.pdf)

Abstract: Several classes of organic compounds were analyzed in aqueous aerosols collected in June, November, and December 1996 from above the sewage aeration tanks of a treatment plant (Prato, Italy), Particle size distribution of organic compounds and their enrichment ratio (E-r) with respect to the magnesium ion were determined to infer the extent to which various species were aerosolized, Organic components were found to be predominantly enriched in fine and large particles of the aerosol and their transfer may be attributed to the 1) adsorption of surfactant organic matter at the air/water interface (such phenomenon is particularly evident for the fine and ultra-fine fractions) and 2) flotation of colloidal matter from wastewater to the largest particles with consequent transport of the adsorbed organic compounds. In addition, the interaction of surfactants with hydrophobic compounds explained the enrichment of the latter in the finest fractions.

Keywords: Polycyclic Aromatic-Hydrocarbons, Marine Aerosol, Antarctic Environment, Atomic Spectrometry, Coastal Vegetation, Particulate Matter, Air/Sea Interface, Urban Atmosphere, San-Rossore, Sea

Notes: highly cited

? Jayne, J.T., Leard, D.C., Zhang, X.F., Davidovits, P., Smith, K.A., Kolb, C.E. and Worsnop, D.R. (2000), Development of an aerosol mass spectrometer for size and composition analysis of submicron particles. *Aerosol Science and Technology*, **33** (1-2), 49-70.

Full Text: [2000\Aer Sci Tec33, 49.pdf](2000/Aer%20Sci%20Tec33,%2049.pdf)

Abstract: The importance of atmospheric aerosols in regulating the Earth’s climate and their potential detrimental impact on air quality and human health has stimulated the need for instrumentation which can provide real-time analysis of size resolved aerosol, mass, and chemical composition, We describe here an aerosol mass spectrometer (AMS) which has been developed in response to these aerosol sampling needs and present results which demonstrate quantitative measurement capability for a laboratory-generated pure component NH4NO3 aerosol, The instrument combines standard vacuum and mass spectrometric technologies with recently developed aerosol sampling techniques, A unique aerodynamic aerosol inlet (developed at the University of Minnesota) focuses particles into a narrow beam and efficiently transports them into vacuum where aerodynamic particle size is determined via a particle time-of-flight (TOF) measurement, Time-resolved particle mass detection is performed mass spectrometrically following particle flash vaporization on a resistively heated surface, Calibration data are presented for aerodynamic particle velocity and particle collection efficiency measurements, The capability to measure aerosol size and mass distributions is compared to simultaneous measurements using a differential mobility analyzer (DMA) and condensation particle counter (CPC), Quantitative size classification is demonstrated for pure component NH4NO3 aerosols having mass concentrations > similar to 0.25 mu g m(-3), Results of fluid dynamics calculations illustrating the performance of the aerodynamic lens are also presented and compared to the measured performance, The utility of this AMS as both a laboratory and held portable instrument is discussed.

Keywords: Aerodynamic Lenses, Air, Air Quality, Am, Analysis, Beams, Chemical, Classification, Climate, Collection, Composition, Controlled Dimensions, Data, Divergence, DMA, Dynamics, Efficiency, Health, Human, Human Health, Impact, Instrumentation, Measure, Measurement, Mobility, Motion, Needs, Nozzle Expansions, Particle Size, Particles, Performance, Potential, Quality, Sampling, Size, Standard, Surface, Techniques, Technologies, TOF, University, Utility, Vacuum

# Title: Aesthetic Plastic Surgery

Full Journal Title: Aesthetic Plastic Surgery

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ferreira, L.M., Hochman, B., Locali, R.F. and Rosa-Oliveira, L.M.Q. (2006), A stratigraphic approach to the superficial musculoaponeurotic system and its anatomic correlation with the superficial fascia. *Aesthetic Plastic Surgery*, **30** (5), 549-552.

Full Text: [2006\Aes Pla Sur30, 549.pdf](2006/Aes%20Pla%20Sur30,%20549.pdf)

Abstract: The superficial musculoaponeurotic system (SMAS) is not included in the International Anatomic Terminology, although it is a fundamental anatomical structure in plastic surgeons. In the literature, the concept of the SMAS is not clear, leading to repercussions in the treatment of the SMAS via the various techniques for rhytidoplasty. This review article, in its aim to conceptualize the SMAS, has as a referential parameter the basic stratigraphic pattern of the human body construction. A systematic review of the literature was performed through Medline, ISI-Web of Science, and Lilacs databases as well as through classical treatises of anatomy for analyses of the stratigraphic principle of SMAS and its relationship to the fascia. In fact, SMAS, an anatomic entity, is part of this construction model. The stratigraphic approach followed in this article to describe the SMAS is novel in the literature and allows for a unified anatomic understanding of SMAS for the scientific community.

Keywords: Anatomy, Databases, Face, Face, Human, Literature, Model, Nose, Review, Science, Smas, Subcutaneous Tissue, Superficial Musculo-Aponeurotic System, Surgery, Surgical Anatomy, Systematic, Systematic Review, Treatment, Vectors, Viscoelastic Properties

? Momeni, A., Becker, A., Torio-Padron, N., Iblher, N., Stark, G.B. and Bannasch, H. (2008), Nipple reconstruction: Evidence-based trials in the plastic surgical literature. *Aesthetic Plastic Surgery*, **32** (1), 18-20.

Full Text: [2008\Aes Pla Sur32, 18.pdf](2008/Aes%20Pla%20Sur32,%2018.pdf)

Abstract: Although many technical descriptions of nipple reconstruction exist in the medical literature, insufficient evidence-based data are present about the outcome. This study aimed to identify randomized controlled trials (RCTs) and controlled clinical trials (CCTs) in the plastic surgical literature addressing nipple reconstruction, and to elucidate whether a hand search was superior to an extensive database search in retrieving all pertinent studies. The hand search included analysis of all “original articles” published in four of the leading plastic surgery journals from January 1990 to December 2005, with subsequent identification of RCTs and CCTs. Additionally, a computerized search was conducted including the following databases: PubMed, Web of Science, and Evidence-Based Medicine Reviews. From a total of 10,476 published original articles in four plastic surgery journals over a 16-year period, only one RCT was identified that addressed nipple reconstruction. The database search, however, retrieved two trials: the RCT identified by hand search and one CCT. The impact of nipple reconstruction is well described in the literature. However, it is astonishing that the plastic surgical literature lacks evidence-based trials addressing this issue. Clearly, more evidence-based trials are necessary to ensure that recommendations for a particular technique are based on solid scientific data.

Keywords: Analysis, Areola Complex, Clinical Trials, Controlled Clinical Trials, Databases, Evidence-Based Medicine, Flap, Impact, Journals, Literature, Medical, Nipple Reconstruction, Outcome, Projection, Pubmed, Randomized Controlled Trials, Science, Surgery, Surgical, Web of Science

# Title: Aesthetic Surgery Journal

Full Journal Title: Aesthetic Surgery Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Reavey, P.L., Klassen, A.F., Cano, S.J., McCarthy, C., Scott, A., Rubin, J.P., Shermak, M. and Pusic, A.L. (2011), Measuring quality of life and patient satisfaction after body contouring: A systematic review of patient-reported outcome measures. *Aesthetic Surgery Journal*, **31** (7), 807-813.

Full Text: [2011\Aes Sur J31, 807.pdf](2011/Aes%20Sur%20J31,%20807.pdf)

Abstract: Evidence-Based Background: In both cosmetic and postbariatric body contouring populations, the primary determinants of success are patient satisfaction and quality of life (QOL). These patient-reported outcomes (PRO) are ideally measured with specially-designed, procedure-or condition-specific questionnaires.. Objective: The authors identify and appraise all patient-reported outcome (PRO) measures (questionnaires) developed for patients undergoing body contouring surgery. Methods: MEDLINE, EMBASE, PsychINFO, Ebase, CINAHL, HAPI, Science Citation Index/Social Sciences Citation Index, Ovid Evidence Based Medicine databases were searched from the inception of each database through August 2010. Articles included in the study described the development and/or psychometric evaluation of a PRO measure developed for body contouring patients. Each measure was then appraised for adherence to internationally-recommended guidelines for item generation, item reduction, and psychometric evaluation. Results: The following five PRO questionnaires were identified by our search: one liposuction (the Freiburg Questionnaire on Aesthetic Dermatology and Cosmetic Surgery, FQAD), one general plastic surgery (Derriford Appearance Scale, DAS-59/24), and three breast reduction measures (the Breast Reduction Assessed Severity Scale Questionnaire, BRASSQ; Breast Related Symptoms questionnaire, BRS; and the BREAST-Q reduction module. Detailed examination of these measures revealed that the FQAD, DAS-59, and BRS are limited by both their content range and psychometric properties. The BRASSQ and BREAST-Q both have strong psychometric properties, and the BREAST-Q is unique in its inclusion of items covering specific postoperative issues such as scarring. Conclusions: While instruments are available for measuring outcomes in breast reduction patients, reliable, valid, and responsive PRO measures are lacking for the majority of body contouring procedures. To demonstrate the unique outcomes of body contouring surgery, future research to rigorously develop and validate new PRO measures in this population is necessary.

Keywords: Abdominoplasty, Adherence, Articles, Authors, Bariatric Surgery, Body Contouring, Brachioplasty, Breast Hypertrophy, Breast Reduction, Citation, Cosmetic Surgery, Databases, Dermatolipectomy, Derriford Appearance, Determinants, Development, Embase, Evaluation, Guidelines, Image, Liposuction, Massive Weight Loss, Measure Individual-Responses, Medline, Methods, Obesity, Outcome, Outcomes, Patient Satisfaction, Patients, Primary, Quality, Quality of Life, Questionnaire, Questionnaires, Reduction, Research, Review, Scale, Scale DAS59, Science, Sciences, Short-Form, Success, Surgery, Systematic, Systematic Review, Thighplasty, Weight-Loss

# Title: Afinidad

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Journal Country/Territory: Spain

Language: Multi-Language

Publisher: Asoc Quimicos

Publisher Address: Inst Quimico Sarria, 17 Barcelona, Spain

Subject Categories:

Chemistry, Multidisciplinary: Impact Factor 0.152, / (2000)

? Elibiari, N., Hawash, S. and Eldiwani, G. (1990), Rate study for ozonation of solophenyl dyesolution. *Afinidad*, **47** (428), 278-280.

Abstract: The effect of ozone on oxidation and decolorization of solophenyl dye solution is examined in a series of studies. The reaction is found to be a pseudo first order reaction and chemical reaction rate constants are determined with respect to both ozone and dye to be 0.03 and 0.06 min-1. From knowledge of the physical mass transfer coefficient and effects of the chemical reactions on mass transfer, a proposed mathematical model is used to describe the overall reaction process and the mass transfer coefficient was found to be 0.69 min-1 which is increased according to the global reaction rate of ozone in the treated solution.

Keywords: Ozone, Water, Dyes

? Deheredia, J.B. and Gonzalez, C.R. (1992), Acid dye ozonation: Kinetic-study. *Afinidad*, **49** (440), 236-240.

Abstract: Ozonation of four acid dyes (Acid Orange 52, Acid Yellow 99, Acid Black 52 and Acid Red 1) in aqueous solution has been studied in an agitated tank reactor. Applying the Danckwerts’ surface renewal theory, the kinetic reaction has been determined. The reaction is second order and kinetic constant is correlated to a semiempirical equation as a function of temperature and pH.

Keywords: Dissociating Organic-Compounds, Inorganic-Compounds, Rate Constants, Ozone, Water

? Marin, M.H. (2002), Activated carbons from coconut shell by chemical activation. A first approach to a quantitative relation between textural parameters and preparation conditions. *Afinidad*, **59** (498), 119-126.

Abstract: High surface area activated carbons were prepared by chemical activation of coconut shell from the canned fruit industry with phosphoric acid as activating agent. The influence of activation parameters namely acid concentration for impregnation, the way of eliminating the impregnating acid and the heating rate on the characteristics of the materials obtained was studied by means of a two level experimental factorial design. The textural properties of the samples are analyzed by N2 adsorption at 77 K and CO2 adsorption at 273 K and by immersion microcalorimetry employing dichloromethane as molecular probe. The BET equation was applied to N2 adsorption isotherm data to determine the surface area. The Dubinin-Radushkevich equation was applied to CO2 and N2 adsorption isotherms to obtain the micropore volume V-0. The micropore surface area corresponding to the microcalorimetric experiments was determined by comparing the heat evolved in the immersion of this substance in the analyzed sample with that corresponding to a reference material of a known area (6.986 J/g corresponds to 62 m2/g). BET specific surface areas as high as 1500 m2/g were obtained and values in the same order for micropore areas determined by microcalorimetric measurements. The mathematical relation between the preparation conditions and the BET surface area through a first-degree polynomial expression is discussed as well as its connection with other textural parameters.

Keywords: Activated Carbons, Coconut Shell, Chemical Activation, Surface Characterization, Experimental Design, Phosphoric-Acid, Lignocellulosic Materials, Atmosphere, Porosity

? El-Batouti, M. (2002), An evaluation of the effect of the use of trisazodye and its iron complex on the rate of dyeing of cellulosic fibers. *Afinidad*, **61** (509), 25-32.

Abstract: Dyeing experiments using Direct Blue 71 and iron complex as premetalised dye have been carried out on cotton fibers, either alone or in the presence of NaCl. The exhaustion of the dye bath has been determined spectrophotometrically. Also the effect of NaCl on the spectra and the rate of dyeing are investigated. The adsorption isotherms, rate of dye uptake, viscosity, enthalpy, entropy and free energy of activation have been calculated and discussed.

Keywords: Adsorption Isotherms, UV Spectra, Trisazodye, Kinetic, Dyes

? Pinzon, M.L., Meseguer, V., Ortuno, J.F., Aguilar, M.I., Llorens, M., Saez, J. and Soler, A. (2004), Cadmium(II) uptakeftom aqueous effluents by biosorption with non living leaves of *Posidonia Oceanica*. *Afinidad*, **61** (509), 74-80.

Abstract: In last decades it has been demonstrated that biosorption can be an effective technology for the metals ion removal from aqueous solutions. In this paper, the cadmium(II) adsorption properties of non-living leaves biomass of marine plant Posidonia Oceanica were investigated. The solid was characterized by elemental analysis and FTIR. Batch experiments were conducted to determine the adsorption capacity of the biomass. It was observed that the adsorption capacity of the biomass strongly depends on solution pH, and it doesn’t depend on the particle size for size lower than 2,5 mm. The biosorption kinetic was fast with 90% of adsorption within 6 minutes and equilibrium was reached at 20 minutes practically. Adsorption isotherms were obtained and the equilibrium data were correlated using the Langmuir and the Freundlich models. The maximum cadmium adsorption capacity was 57,1 mg Cd2+/g solid at a solution pH of 6. The effects of the presence of Na+, K+ and Ca2+ ions in the solution on Cd(II) uptake were studied. The presence of Ca2+ ions affects Cd(II) uptake significantly.

Keywords: Adsorption, Biomass, Biosorption, Cadmium, Heavy-Metals, Langmuir, Posidonia Oceanica, Removal

? Sepulveda, L., Fernandez, K., Contreras, E. and Palma, C. (2004), The application of magallanic peat for wastewater treatment: Morphological characterization and decolorization. *Afinidad*, **61** (511), 204-211.

Abstract: The purpose of this article is to establish the effect of the removal of water from the peat cellular structure, as well its use as adsorbent of textile dyes. To reach this objective, a commercial sphagnum peat form the Magallanic region was used. The original humidity of this commercial peat is 70% and its conditioning requires a drying stage. The tests were performed using a convective air dryer at 30, 60 and 80°C. After drying, the peat structure was analyzed by electronic microscopy to identify the conditions permitting an effective dryness without affecting the peat porous structure. Once these conditions were defined, adsorption laboratory tests were performed to evaluate the feasibility of removing acid, basic and reactive dyes from the solution. The results of the electronic microscopy show that the drying process performed at drastic conditions of temperature to reach lower levels of residual humidity, produce a damage to the porous structure of the solid, affecting the surface area of the adsorbent particles. The study of decolorization under the selected conditions demonstrate that the basic dyes present a high affinity adsorption for peat; whereas, the acid and reactive dyes present low affinity for the adsorbent.

Keywords: Adsorption, Dyes, Peat, Wastewater, Sphagnum Moss Peat, Aqueous-Solution, Metal Removal, Adsorption, Sorption, Kinetics, Dyestuffs, Carbon, Dyes, Ions

? de Castro, F.H.B., de Hoces, M.C. and Garcia, G.B. (2004), Kinetic aspects in the cadmium removal by biosorption. *Afinidad*, **61** (514), 454-459.

Abstract: The kinetic of cadmium biosorption has been studied using olive stone as the solid sorbent. The effect of main operational parameters, pH, the initial cadmium concentration, and the temperature, has been analyzed and the results obtained were fitted to three kinetic models: first order of Lagergren, second order and pseudo-second order. With respect to pH, the results adjust to models of pseudo-second order, although, in the range tried, it has a significant effect neither on the maximum percentage of cadmium removed nor on the rate constant. However, as it increases the initial concentration of cadmium, the percentage of cadmium removed by the olive stone like the pseudo-second order kinetic constant, decreases considerably. Finally, an increase of temperature only slightly elevates the percentage of cadmium removed whereas the kinetic constant is practically duplicated in the margin of temperatures tried.

Keywords: Biosorption, Heavy Metals, Kinetic, Biosorbents, Aqueous-Solutions, Equilibrium, Adsorption, Lead(II), Sorption, Carbon, Peat

? de Castro, F.H.B., Garcia, G.B., de Hoces, M.C., Lara, M.A.M. and Jimenez, A.M. (2006), Use of solid of olive tree remainders in the biosorption of chromium. *Afinidad*, **63** (526), 454-460.

Abstract: The capacity of chromium(Ill) removal has been studied using the biosorbents olive stone, olive mill waste-water (alpeorujo) and olive tree pruning, analyzing itself the influence on the process of parameters like pH, biosorbent concentration, contact time and temperature, along with the study of the process kinetics. Also, an analysis by means of infrared spectroscopy has been carried out to identify the functional groups that can participate in the biosorption of heavy metals process. The results obtained show that, in general, acidic pH improves the biosorption of chromium, especially with alpeorujo and olive tree pruning. Also, the biosorption capacity diminishes when increasing the temperature, being the effect more accused with alperorujo and olive tree pruning; nevertheless, the biosorption process is very fast, increasing the rate as the temperature rises for the three solids used. A pseudo-second order model has been used to describe the kinetics of the process and the values of activation energy have been obtained in each case.

Keywords: Biosorption, Heavy Metals, Remainders Olive Tree Remainders, Kinetic, Functional Groups

? Girado, L. and Moreno, J.C. (2007), Influence of the pH of Pb2+ aqueous solutions on the immersion enthalpy and the adsorption capacity of activated carbons. *Afinidad*, **64** (530), 517-522.

Abstract: Pb2+ adsorption isotherms in aqueous solution on an activated carbon obtained from mineral carbon were determined at different pH values. Immersion enthalpies are also determined for the solutions. The adsorbent shows a superficial area of 586 m2.g-1 and a total pore volume of 0,37 cm3g-1. Concerning to the chemical characteristics, the activated carbon presents a higher acid sites content, 0.92 meq g-1, than basic sites, 0.63 meq g-1, giving it a neutral character with a pH value in the point of zero charge, pH(PZC) of 7,4. In aqueous solutions, the Pb2+ adsorbed quantity and the immersion enthalpy at different pH values show that these values are maximum for pH 4 with values of 155.7 mgg-1 y 27.6 Jg-1 respectively. Values for the Pb2+ adsorption capacity and immersion enthalpy are linearly related and second-order relations are obtained between the adsorption constant and immersion enthalpy and between aforesaid constant and the solution pH.

Keywords: Activated Carbon, Activated Carbons, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Isotherms, Aqueous Solution, Aqueous Solutions, Capacity, Carbon, Charge, Immersion Enthalpy, Isotherms, Langmuir Isotherm, Pb2+, Pb2+ Adsorption, pH, Relations, Solution

? de Castro, F.H.B., Garcia, G.B., de Hoces, M.C. and Martin-Lara, M.A. (2008), Influence of some parameters on lead biosorption by agricultural waste. *Afinidad*, **65** (536), 286-292.

Full Text: Afinidad65, 286.pdf

Abstract: In this work, lead biosorption in aqueous media has been studied using as solid biosorbents olive stone, olive mill waste-water and olive tree pruning, analyzing the effect of pH, biosorbent concentration, particle size and time of contact in the process. The results show that in very acid media removal of lead is not produced for any of the solids and if pH is increased the percentage of lead removal is increased too, reaching a maximum at pH 4. In other hand, an increase of the biosorbent concentration raises the percentage removed of lead, being particularly significant this increase for olive stone and olive mill waste-water. The results obtained for the effect of particle size showed that the percentage removed of lead decreases if particle size is increased, although this decrease is not very important for olive mill waste-water and olive tree pruning. Finally, the lead biosorption process by olive stone, olive mill waste-waster and olive tree pruning occurs quickly reaching the equilibrium before 60 minutes have been passed.

Keywords: Adsorbent, Agricultural Waste, Aqueous-Solutions, Biomass, Biosorption, Cadmium, Equilibrium, Heavy Metals, Heavy-Metals, Mechanisms, Removal, Sorption, Wastewater, Water

? Hernalinz, F., Calero, M., Blazquez, G., Martin-Lara, M.A. and Tenorio, G. (2008), Biosorption kinetic of Cr(VI) by olive stone. *Afinidad*, **65** (538), 437-444.

Full Text: Afinidad65, 437.pdf

Abstract: In this work, the kinetic of biosorption of chromium(VI) has been studied using olive stone as sorbent solid. The results show that Cr(VI) is partly removed by olive stone and partly reduced to Cr(III) and from a contact time next to 300 minutes the percentages of total Cr and Cr(VI) removed remain constant, indicating that neither of the two processes is produced. Likewise, the capacity of removal of Cr(VI) by olive stone decreases as pH increases, being more pronounced at pH>2. For the total Cr, the values of the sorption capacity are lower than the ones obtained for Cr(VI), which shows the effect of the reduction of Cr(VI) to Cr(III). The experimental results have been adjusted to the pseudo-first-order, pseudo-second-order, Elovich and intraparticle diffusion models, being the pseudo-second-order model that best reproduced the kinetics of the process in all experimental conditions. Finally, for Cr(VI), the biosorption capacity and the kinetic constant increase as the temperature rises from 25 to 60°C and both parameters remain almost constant as the temperature rises to 80°C.

Keywords: Activated Carbons, Adsorption-Kinetics, Agricultural Waste, Aqueous-Solutions, Biosorption, Heavy Metals, Heavy-Metals, Hexavalent Chromium, Industrial-Waste-Water, Metal-Ions, Rice Bran, Shell Charcoal, Sphagnum Moss, Wastewater

# Title: AJAR-African Journal of AIDS Research

Full Journal Title: AJAR-African Journal of AIDS Research

ISO Abbreviated Title:

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ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Onyancha, O.B. (2008), Growth, productivity, and scientific impact of sources of HIV/AIDS research information, with a focus on eastern and southern Africa. *AJAR-African Journal of AIDS Research*, **7** (1), 55-70.

Full Text: [2008\AJAR7, 55.pdf](2008/AJAR7,%2055.pdf)

Abstract: As channels of communicating HIV/AIDS research information, serial publications and particularly journals are increasingly used in response to the pandemic. The last few decades have witnessed a proliferation of sources of HIV/AIDS-related information, bringing many challenges to collection-development librarians as well as to researchers. This study uses an informetric approach to examine the growth, productivity and scientific impact of these sources, during the period 1980 to 2005, and especially to measure performance in the publication and dissemination of HIV/AIDS research about or from eastern or southern Africa. Data were collected from MEDLINE, Science Citation Index (SCI), Social Sciences Citation Index (SSCI), and Ulrich’s Periodical Directory. The analysis used Sitkis version 1.5, Microsoft Office Access, Microsoft Office Excel, Bibexcel, and Citespace version 2.0.1. The specific objectives were to identify the number of sources of HIV/AIDS-related information that have been published in the region, the coverage of these in key bibliographic databases, the most commonly used publication type for HIV/AIDS research, the countries in which the sources are published, the sources’ productivity in terms of numbers of papers and citations, the most influential sources, the subject coverage of the sources, and the core sources of HIV/AIDS-information.

Keywords: Africa, Analysis, Approach, Bibliographic Databases, Citations, Coverage, Databases, Growth, HIV, AIDS, Impact, Information, Journals, Measure, MEDLINE, Papers, Performance, Productivity, Proliferation, Publication, Publications, Research, SCI, Science Citation Index, Sources, SSCI, Version

? Breuer, E., Myer, L., Struthers, H. and Joska, J.A. (2011), HIV/AIDS and mental health research in sub-Saharan Africa: A systematic review. *AJAR-African Journal of AIDS Research*, **10** (2), 101-122.

Full Text: [2011\AJAR10, 101.pdf](2011/AJAR10,%20101.pdf)

Abstract: The relationship between mental illness and HIV/AIDS is complex and bidirectional. A significant amount of research has been performed in high-income countries but less is known about HIV and mental health in sub-Saharan Africa. The objectives of the review were to search the literature for quantitative studies conducted in sub-Saharan Africa on mental health and HIV and to critically evaluate and collate the studies in order to identify research needs and priorities. The databases Ovid, MEDLINE, PsycINFO and the Social Sciences Citation Index (SSCI) were searched for variations of search terms related to HIV/AIDS and mental health and studies limited to the populations of African countries. In addition, we hand-searched indexes of key journals and the databases of academic theses. We included 104 papers or research publications. The majority of these were published after 2005. The major topics covered were: mental-health-related HIV-risk behaviour, HIV in psychiatric populations, and mental illness in HIV-positive populations. The reported prevalence levels of mental illness among people living with HIV or AIDS (PLHIV) was high, with all but one study noting a prevalence of 19% or higher. Neurocognitive changes in adults with HIV were also prevalent, with reported deficits of up to 99% in symptomatic PLHIV and 33% in non-symptomatic PLHIV. Research on HIV in relation to mental health is increasing; however, there is a need for good-quality prospective studies to investigate the bidirectional effects of mental illness and HIV on each other.

Keywords: Active Antiretroviral Therapy, Adults, Africa, African Countries, AID, AIDS, CD4 Cell Count, Citation, Databases, HIV, HIV-Infected Individuals, HIV, AIDS, Human-Immunodeficiency-Virus, Indexes, Journals, Literature, Literature Reviews, Medline, Mental Health, Mental Illness, Neurocognitive Deficits, Papers, Positive Pregnant-Women, Posttraumatic-Stress-Disorder, Prevalence, Priorities, Prospective Studies, Psychiatric Disorders, Psychological Distress Symptoms, Publications, Quality-of-Life, Quantitative, Quantitative Research, Randomized Controlled-Trial, Recently Diagnosed Patients, Research, Review, Social Sciences, Social Sciences Citation Index, SSCI, Sub-Saharan Africa, Systematic, Systematic Review, Topics

# Title: African Journal of Biotechnology

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Subject Categories:

Biotechnology & Applied Microbiology: Impact Factor 0.565, 131/150 (2009)

Horsfall, Jr., M., Abia, A.A. and Spiff, A.I. (2003), Removal of Cu(II) and Zn(II) ions from wastewater by cassava (*Manihot esculenta Cranz*) waste biomass. *African Journal of Biotechnology*, **2** (10), 360-364.

Full Text: [A\Afr J Bio2, 360.pdf](A/Afr%20J%20Bio2,%20360.pdf)

Abstract: The ability of cassava waste biomass (untreated and acid treated) to remove heavy metals (Cu(II) and Zn(II)) from single-ion solution and wastewater was investigated. All experiments were conducted using 10mM solutions of mixed metal ions of CuSO4.5H2O and ZnCl2. The uptake capacities of the two metal ions tested on the untreated and acid treated cassava waste biomass were 71.3 and 85.2 mg/g for Cu(II), and 43.4 and 58.1 mg/g for Zn(II) in single-ion solution. For wastewater, the uptake capacities of untreated and acid treated biomass was found to be 40.1 and 59.7 mg/g for Cu(II), and 38.6 and 38.7 mg/g for Zn(II), respectively. Metal ion uptake capacities in wastewater were lower than in single-ion solution probably due to competition of metal ions of different sizes on available binding sites. Uptake capacities of these metal ions on the biomass surface increased with acid treatment. Equilibrium sorption studies showed that the extent of metal uptake was enhanced by chemically modifying the cassava waste biomass by thiolation. Cassava waste biomass saturated with metal ions shows remarkable ability for metal recovery by dilute acid treatment, and can be used repeatedly for removal of heavy metals in single-ion solution and in wastewater effluents.

Coulibaly, L., Gourene, G. and Agathos, N.S. (2003), Utilization of fungi for biotreatment of raw wastewaters. *African Journal of Biotechnology*, **2** (12), 620-630.

Full Text: [A\Afr J Bio2, 620.pdf](A/Afr%20J%20Bio2,%20620.pdf)

Abstract: Fungal biomasses are capable of treating metal-contaminated effluents with efficiencies several orders of magnitude superior to activated carbon (F-400) or the industrial resin Dowex-50. Additionally, fungal biomasses are susceptible to engineering improvements and regeneration of their capabilities. With regard to organic pollutants, excessive nutrients and dyes, fungi can remove them from wastewaters, leading to a decrease in their toxicities. However, the detoxification rates seem to be dependent on media and culture conditions. The postreatement by anaerobic bioprocesses of effluents that have been pretreated with fungi can lead to higher biogas than the original effluents. In addition to the degradation of organic pollutants, fungi produce added-value products such as enzymes (LiP, MnP, Lacc, amylase, etc.) and single-cell protein (SCP). Most research on fungal capacities to purify polluted effluents has been performed on a laboratory scale, hence there is a need to extend such research to pilot scale and to apply it to industrial processes.

Keywords: Wastewaters, Effluents, Fungi, Biodegradation, Biosorption, Decolourisation, Value-Added Treatment

Horsfall, Jr., M. and Spiff, A.I. (2005), Effect of metal ion concentration on the biosorption of Pb2+ and Cd2+ by *Caladium bicolor* (wild cocoyam). *African Journal of Biotechnology*, **4** (2), 191-196.

Full Text: [2005\Afr J Bio4, 191.pdf](2005/Afr%20J%20Bio4,%20191.pdf)

Abstract: The influence of initial metal ion concentration of the batch sorption of Pb2+ and Cd2+ onto a low-cost biosorbent was investigated. The experimental results were analysed in terms of Langmuir and Freundlich isotherms. According to the evaluation using Langmuir equation, the monolayer sorption capacity obtained were 49.53 and 65.50 mM/ g for Pb2+ and Cd2+, respectively The data further showed that, sorption of the two divalent metals onto the biomass increased with increase in initial metal ion concentration until monolayer coverage is attained. The thermodynamic assessment of the metal ion Caladium bicolor biomass system indicates the feasibility and spontaneous nature of the process and Go was evaluated as ranging from - 4.55 to - 6.63 KJ mol-1 and - 4.02 to - 6.09 KJ mol-1 for Pb2+ and Cd2+ sorption, respectively. The order of magnitude of the G(o) values indicates an ion-exchange physisorption process.

Keywords: Phytoremediation, Cocoyam, Adsorption, Water Treatment, Heavy Metals Removal, Sphagnum Moss Peat, Removal, Cadmium, Lead

? Preetha, B. and Viruthagiri, T. (2005), Biosorption of zinc(II) by *Rhizopus arrhizus*: Equilibrium and kinetic modelling. *African Journal of Biotechnology*, **4** (6), 506-508.

Full Text: [2005\Afr J Bio4, 506.pdf](2005/Afr%20J%20Bio4,%20506.pdf)

Abstract: The adsorption of zinc(II) ions on *Rhizopus arrhizus*, a filamentous fungus, was investigated in a batch reactor. Batch adsorption studies were carried out by varying biomass loading. A contact time of 120 min was required to reach equilibrium. Specific zinc(II) uptake decreased with increase in biomass loading and these results were analyzed in light of the Lagergren equation and the process followed a second order rate kinetics. The equilibrium data were analyzed using the Langmuir, Freundlich, Redlich-Peterson and BET adsorption isotherms. The characteristic parameters for each isotherm were determined. All the isotherms provided the best correlation for zinc(II) onto the *R. arrhizus*.

Keywords: Zinc, Biosorption, *Rhizopus Arrhizus*, Kinetic Models, Adsorption Isotherms, Adsorption, Removal

? Abia, A.A. and Igwe, J.C. (2005), Sorption kinetics and intraparticulate diffusivities of Cd, Pb and Zn ions on maize cob. *African Journal of Biotechnology*, **4** (6), 509-512.

Full Text: [2005\Afr J Bio4, 509.pdf](2005/Afr%20J%20Bio4,%20509.pdf)

Abstract: The kinetics of sorption and intraparticulate diffusivities of Zn, Cd and Pb using maize cob was studied. The amount of the metal ions adsorbed increased with time. The highest sorption rates of the three metal ions were 71% for Zn2+, 32% for Cd2+, and 30% for Pb2+. The fractional attainment of equilibrium showed that Zn2+ reached equilibrium before Pb2+ ion and then Cd2+ ion. This study showed that the sorption of Zn2+, Cd2+ and Pb2+ ions on maize cob is particle diffusion controlled. The rate coefficients for particle diffusion were 0.07 min-1 for Zn2+, 0.053 min-1 for Pb2+ and 0.081 min-1 for Cd2+.

Keywords: Adsorption, Kinetics, Intraparticulate Diffusivity, Heavy Metal, Maize Cob, Aqueous-Solution, Lead Ions, Husks

? Krishnamoorthy, J.R., Ranganathan, S., Shankar, S.G. and Ranjith, M.S. (2006), Dano: A herbal solution for dandruff. *African Journal of Biotechnology*, **5** (10), 960-962.

Full Text: [2006\Afr J Bio5, 960.pdf](2006/Afr%20J%20Bio5,%20960.pdf)

Abstract: Dano, a poly-herbal hair oil was studied for anti-dandruff activity using microbiological and clinical tests. There was a clear symptomatic relief from dandruff in all the volunteers after 10 days of use. Further, the isolation of Pityrosporum ovale, the causative organism of the dandruff in culture was not possible after use of the Dano oil. The plant extracts is from Wrightia tinctoria (Indrajev), Cassia alata (Dadmari) and bitter fraction of Azadirachta indica (Neem or Nimba). Methylene blue reductase test was employed to study the anti-dandruff efficacy of the oil.

Keywords: Dandruff, Methylene Blue Reductase Test, Pityrosporum Ovale

? Igwe, J.C. and Abia, A.A. (2006), A bioseparation process for removing heavy metals from waste water using biosorbents. *African Journal of Biotechnology*, **5** (12), 1167-1179.

Full Text: [2006\Afr J Bio5, 1167.pdf](2006/Afr%20J%20Bio5,%201167.pdf)

Abstract: The removal of heavy metals from our environment especially wastewater is now shifting from the use of conventional adsorbents to the use of biosorbents. The presence of heavy metals in the environment is of major concern because of their toxicity, bioaccumulating tendency, and threat to human life and the environment. In recent years, many low cost sorbents such as algae, fungi bacteria and lignocellulosic agricultural by-products have been investigated for their biosorption capacity towards heavy metals. In this comprehensive review, the emphasis is on outlining the occurrences and toxicology of heavy metals and the biosorption capacity of biosorbents compared to conventional adsorbents. A detailed description of the adsorption properties and mode of action of these biosorbents is offered in order to explain the heavy metal selectivity displayed by these biosorbents. The role of cell structure, cell wall, micropores and macropores is evaluated in terms of the potential of these biosorbents for metal sequestration. Binding mechanisms are discussed, including the key functional groups involved and the ion-exchange process. Quantification of metal-biomass interactions is fundamental to the evaluation of potential implementation strategies, hence, sorption isotherms, sorption kinetics, intraparticle diffusivities as well as models used to characterize biosorbent sorption are reviewed. The sorption behavior of some biosorbents with various heavy metals is summarized, their relative performance evaluated and a bioseperation process flow diagram for heavy metal removal from wastewater using biosorbents was proposed.

Keywords: Biosorption, Heavy Metals, Biosorbents, Kinetics, Wastewater, Itai-Itai Disease, Activated Carbon, Aqueous-Solutions, Hexavalent Chromium, Cr(VI) Removal, Cassava Waste, Ion-Exchange, Maize Cob, Zn Ions, Adsorption

? Abia, A.A. and Asuquo, E.D. (2006), Lead(II) and nickel(II) adsorption kinetics from aqueous metal solutions using chemically modified and unmodified agricultural adsorbents. *African Journal of Biotechnology*, **5** (16), 1475-1482.

Full Text: [2006\Afr J Bio5, 1475.pdf](2006/Afr%20J%20Bio5,%201475.pdf)

Asbtract: This paper discusses the kinetics of lead(II) and Nickel(II) ions adsorption from aqueous solutions using chemically modified and unmodified agricultural adsorbents at 28°C, pH 6.2 and 0.01M NaCl ionic strength. The removal of the two metals were found to increase with increase in chemical modification, the sequence being 1.0MOPF>0.5MOPF>UOPF. In addition Nickel(II) had a higher percentage removal than lead(II). The intraparticle diffusion rate constant (Kid) were determined to be 63.023 min-1 (Ni2+) and 38.212 min-1 (Pb2+) for the 1.0MOPF adsorbent. The results show that the intraparticle diffusion model fits the sorption of lead(II) with higher coefficient of determination (r2) than Nickel(II), thereby indicating that the intra-particle diffusion may be the rate limiting step for Pb2+ sorption. The results from this study indicates that a good adsorbent for the removal of Ni2+ and Pb2+ can be obtained from both chemically modified and unmodified oil palm fruit fibre. © 2006 Academic Journals.

Keywords: Adsorbent, Chemical Modified and Agricultural-by-Product, Intraparticle Diffusion, Mercaptoacetic Acid, Oil Palm Fruit Fibre

? Amuda, O.S. and Ibrahim, A.O. (2006), Industrial wastewater treatment using natural material as adsorbent. *African Journal of Biotechnology*, **5** (16), 1483-1487.

Full Text: [2006\Afr J Bio5, 1483.pdf](2006/Afr%20J%20Bio5,%201483.pdf)

Abstract: Attempts were made to compare the adsorption efficiency of coconut shell-based granular activated carbon with the adsorption efficiency of commercial carbon, Calgon carbon F-300, with respect to adsorption of organic matter from a beverage industrial wastewater. Freundlich adsorption isotherm was used to analyze the adsorption efficiencies of the two activated carbons. These studies indicate that acid-activated coconut shell carbon had higher adsorption for organic matter expressed as chemical oxygen demand, (COD), than barium chloride- activated coconut shell carbon and Calgon carbon (F-300) at all carbon dosages used. Thus, the potential for using agricultural waste (coconut shell) that litter our environment may be valuable resources for removal of organic matter from industrial wastewater.

Keywords: Coconut Shell, Activated Carbon, COD, Beverage Industrial Wastewater, Granular Activated Carbons, Agricultural By-Products, Raw Sugar Decolorization, Fentons Reagent, Removal, Shell, Optimization, Geosmin, Metals

? Abia, A.A. and Didi, O.B. (2007), Transfer zone behaviour of As(III), Co(II) and Mn(II) ions on sulphur-hydryl infused cellulose surface. *African Journal of Biotechnology*, **6** (3), 285-289.

Full Text: [2007\Afr J Bio6, 285.pdf](2007/Afr%20J%20Bio6,%20285.pdf)

Abstract: Penetrant transport phenomenon was applied to determine the strive of As(III), Co(II) and Mn(II) ions across the adsorbate/ cellulose interface. Penetrant-n and K values calculated for the metals on differentially thiolated (mercaptoacetic acid treated) cellulose surfaces were highest for As(III) at UCF-n, K (3.1278, 0.3064), 0.5MF-n, K (2.4248, 0.4716) and 1.0MF-n, K (1.9136, 0.4885). For Co(II), n and K values were UCF (2.8608, 0.3220), 0.5MF (1.6791, 0.5351), 1.0MF (0.9348, 0.6952). For Mn(II), n and K values were UCF (1.2717, 0.6268), 0.5MF (1.1114, 0.6639), 1.0MF (0.5833, 0.7707). As(III) strive depicts 30% adsorption against the non-cationic moieties it generates in a partially electrical double layered adsorption system.

Keywords: Adsorption, Heavy Metals, Cassava Fiber, Penetrant Transport, Strive, Aqueous-Solution, Zn Ions, Cadmium, Sorption, Biomass, Removal, Lead, Cd

? Annadurai, G., Ling, L.Y. and Lee, J.F. (2007), Biodegradation of phenol by *Pseudomonas pictorum* on immobilized with chitin. *African Journal of Biotechnology*, **6** (3), 296-303.

Full Text: [2007\Afr J Bio6, 296.pdf](2007/Afr%20J%20Bio6,%20296.pdf)

Abstract: Biodegradation of phenol using Pseudomonas pictorum (ATCC 23328) a potential biodegradant of phenol was investigated under different operating conditions. Chitin was chosen as a support material and then partially characterized physically and chemically. The pH of the solution was varied over a range of 7-9. The maximum adsorption and degradation capacity of bacteria immobilized with chitin at 30°C when the phenol concentration was 0.200 mg/L is at pH 7.0. The results showed that the equilibrium data for all phenol-degradation sorbent systems fitted the Langmuir, Freundlich and Redlich-Peterson model best. Kinetic modeling of phenol degradation was done using the pseudo-first order and pseudo-second order rate expression. The biodegradation data generally fit the intraparticle diffusion rate equation from which biodegradation rate constant, diffusion rate constant were determined.

Keywords: Activated Carbon, Adsorption, Adsorption-Isotherm, Alumina, Bacteria, Biodegradation, Capacity, Chitin, Concentration, Degradation, Diffusion, Diffusion Rate, Equilibrium, Equilibrium Data, Expression, Freundlich, Immobilized, Intraparticle Diffusion, Isotherm and Kinetic Studies, Kinetics, Langmuir, Model, Modeling, Operating Conditions, Order, pH, Phenol, Phenol Degradation, Polycyclic Aromatic-Hydrocarbons, Pore, Potential, Pseudo Second Order, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second-Order, Pseudomonas, Pseudomonas Pictorum, Range, Rate, Rate Constant, Rate Equation, Redlich-Peterson, Removal, Soil, Sorbent, Sorption, Support, Water

? Gastrow, M. (2008), Great expectations: The state of biotechnology research and development in South Africa. *African Journal of Biotechnology*, **7** (4), 342-348.

Full Text: [2008\Afr J Bio7, 342.pdf](2008/Afr%20J%20Bio7,%20342.pdf)

Abstract: As biotechnology industries are knowledge-intensive, Research and Experimental Development (R and D) are key drivers of growth. Governments and businesses have an interest in creating an environment that stimulates R and D and the commercialisation thereof. Discourse relating to the best means to support biotechnology R and D is extensive. However, there has to date a paucity of quantitative data describing biotechnology R and D in South Africa. This paper therefore offers a brief quantitative profile of South Africa’s biotechnology R and D. These findings provide key indicators of scale, scope, ownership, sectorial division, geographical distribution and collaborative structure. Bibliometric and patent data are used, as well as data sourced from the National Survey of Research and Experimental Development Inputs. It is found that South Africa’s biotechnology R and D investment is small by international standards, but a leader in the African context. There are moreover certain collaborative networks, geographical clusters, and industry applications that demonstrate a high concentration of R and D, which may indicate a path towards achieving critical mass in these areas. Finally, the 2005/6 data used here may be used as baseline data to monitor and evaluate the national 2008 National Biotechnology strategy.

Keywords: Biotechnology, Development, Environment, Growth, Indicators, International, Patent, Research, Research and Development, Small, South Africa, Standards, Structure

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Full Text: [2008\Afr J Bio7, 2034.pdf](2008/Afr%20J%20Bio7,%202034.pdf)

Abstract: The batch removal of copper(II) ions from aqueous solution and wastewater using the activated carbon prepared from Gracilaria by acid decomposition was investigated. The effect of pH, biosorption time, adsorbent dose, and metal ions concentration, were considered. The most effective pH was found to be 4.0. The biosorption capacities were solution pH dependent and the maximum uptake for copper with initial concentration 70, 100 and 150 mg l-1 at pH 4.0 were obtained 95.53, 93.72 and 88.84%, respectively. The total metal ions biosorption occurs within 2 h. The equilibrium adsorption data fitted to Langmuir and Freundlich isotherm models. Both the models represent the experimental data satisfactorily. The adsorption follows second order kinetic. This study shows the benefit of using activated carbon from marine red algae as a low cost sorbent for the removal of copper from aqueous solution wastewater.

Keywords: Activated Carbon, Adsorbent, Adsorbent Dose, Adsorption, Algae, Aqueous Solution, Aqueous Solutions, Biosorption, Carbon, Copper, Cost, Cu(II), Decomposition, Equilibrium, Experimental, Freundlich, Freundlich Isotherm, Gracilaria, Isotherm, Isotherm Model, Kinetic, Langmuir, Metal, Metal Ions, Models, pH, pH-Dependent, Removal, Second Order, Second-Order, Solution, Sorbent, Ulva-Lactuca, Wastewater

? Aluyor, E.O. and Badmus, O.A.M. (2008), COD removal from industrial wastewater using activated carbon prepared from animal horns. *African Journal of Biotechnology*, **7** (21), 3887-3891.

Full Text: [2008\Afr J Bio7, 3887.pdf](2008/Afr%20J%20Bio7,%203887.pdf)

Abstract: The present study was undertaken to compare the adsorption efficiency of activated carbon prepared from animal horns (AHC), which is both a waste and a pollutant and a commercial activated carbon (CAC) with respect to uptake of the organic components responsible for the chemical oxygen demand (COD) of industrial wastewater. The adsorption process was examined in terms of its equilibria and its kinetics. The effect of pH, contact time and adsorbent dose were investigated. The most effective pH was found to be 5 for AHC and 6 for CAC. The equilibrium data for COD removal fitted the Linear, Langmuir and the Freundlich models. The mechanisms of the rate of adsorption of COD were analysed using the pseudo-second-order model. The model provided a very high degree of correlation of the experimental adsorption rate data suggesting that this model could be used in design applications.

Keywords: Adsorption, Batch, Kinetics, Langmuir, Freundlich, Adsorbent, Fly-Ash, Sorption, Copper

? Igwe, J.C., Ekwuruke, A., Gbaruko, B.C. and Abia, A.A. (2009), Detoxification of copper fungicide using EDTA-modified cellulosic material. *African Journal of Biotechnology*, **8** (3), 499-506.

Full Text: [2009\Afr J Bio8, 499.pdf](2009/Afr%20J%20Bio8,%20499.pdf)

Abstract: Pesticides are poisons and can be particularly dangerous when misused or carelessly disposed. The detoxification of a copper fungicide (KOCIDE 101) using maize cob, a cellulosic material, was studied. Based on copper as the active agent (after a sorption period of 1 h), the concentration of the fungicide reduced from an initial value of 2000 to 206.25 ppm for the unmodified maize cob and to 24.31 ppm for the modified maize cob. The pseudo-first and second order rate equations were used to model the detoxification process. The intraparticle diffusivity and mechanism of the sorption was proposed. Also, equilibrium sorption isotherms were evaluated using the Freundlich, Langmuir and Dubinin-Radushkevich isotherm models. This results show that maize cob is an effective adsorbent for copper fungicide deactivation and detoxification.

Keywords: Adsorption, Adsorption, Aqueous-Solutions, Binding, Cadmium, Copper Fungicide, Detoxification, EDTA, Kinetics, Lead, Maize Cob, Mechanism, Parkii Seed Husks, Removal, Sorption, Zn Ions

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Full Text: [2009\Afr J Bio8, 1136.pdf](2009/Afr%20J%20Bio8,%201136.pdf)

Abstract: Polypogon monspeliensis a globally available natural waste material was used for uptake of Cd(II) from aqueous solutions in this study. The results clearly demonstrate the effect of important experimental parameters on the biosorption process in batch experiments. The evaluated pH, biosorbent dose, size and initial metal concentration for Cd(II) uptake by P. monspeliensis waste biomass were 6, 0.05 g, 0.10 mm and 100 mg/L respectively. The Cd(II) sorption process by P. monspeliensis waste biomass was described well by pseudo second order kinetic model and Langumir sorption isotherm model. Metal equilibrium was reached in 120 min. A further increase in incubation time had no significant effect on the biosorption of the metal. FTIR spectroscopic results pointed out the involvement of hydroxyl and amine groups in the Cd(II) sorption by P. monspeliensis waste biomass.

Keywords: Aqueous-Solutions, Biosorption, Cd(II), Chemical-Modification, Corynebacterium-Glutamicum, Golden Shower Biomass, Isotherms, Kinetics, Ni(II) Biosorption, Pb(II) Biosorption, Polypogon Monspeliensis, Pseudo Second Order, Removal, Sludge

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Full Text: [2009\Afr J Bio8, 2212.pdf](2009/Afr%20J%20Bio8,%202212.pdf)

Abstract: An adsorbent was prepared using spent tea leaf and was used to remove lead (Pb) from solution. The Pb removal by the spent tea leaf adsorbent depended on pretreatment of spent tea leaf, adsorption contact time and adsorbent dosage. The optimum pretreatment conditions were confirmed to be that tea leaf was ground to 0.28-0.45 mm in diameter and then drenched in 0.3 M NaOH for 12 h. Adsorption kinetic study showed that the adsorption of Pb onto the spent tea leaf followed the pseudo-second-order model. The adsorption was time dependent and adsorbent dosage dependent. The optimum contact time was 8 h.

Keywords: Adsorbent, Adsorbent, Adsorption, Adsorption Kinetics, Available Casing Materials, Camellia Sinensis, Compost Formulas, Cultivation, Dye, Lead Removal, Leaves, Mushroom Agaricus-Bisporus, Spent Tea Leaf, Waste, Wheat-Straw

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Full Text: [2009\Afr J Bio8, 3364.pdf](2009/Afr%20J%20Bio8,%203364.pdf)

Abstract: The adsorption of Cu2+ and Zn2+ ions on bamboo root biomass from an aqueous solution was studied. Some parameters that determine metal uptake including contact time, adsorbent dose and initial concentration of the metal ions were evaluated. The optimum contact time to attain equilibrium is of the order of 15 to 20 min for both metal ions. The kinetic studies showed that the sorption rates could be described by a pseudo-second order process. Rate constants were determined as 9.13×10-2 and 6.30×10-2 g mg-1 min-1 for Cu2+ and Zn2+ ions, respectively. The equilibrium sorption capacity of Cu2+ and Zn2+ ions were determined from the Langmuir equation as 28.57 and 50.00 mg g-1, respectively. The results from this study showed that acid treated bamboo root could be a good adsorbent for the removal of Cu2+ and Zn2+ ions from industrial effluents. The sorption process is adjudged endothermic as the apparent free energy change (*G*ado) values were found to be 4.14 and 5.22 kJ mol-1 for Cu2+ and Zn2+ ions, respectively.

Keywords: Adsorbent, Adsorbent Dose, Adsorption, Aqueous Solution, Aqueous Solutions, Bamboo, Biomass, Cadmium, Capacity, Concentration, Copper, Cu2+, Effluents, Endothermic, Energy, Equilibrium, Equilibrium Studies, Industrial Effluents, Ions, Kinetic, Kinetic Studies, Langmuir, Langmuir Equation, Metal, Metal Ions, Metal Uptake, Nickel, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Rate Constants, Rates, Removal, Solution, Solutions, Sorption, Sorption Capacity, Sorption Process, Uptake, Waste, Zinc, Zn2+

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Full Text: [2009\Afr J Bio8, 4140.pdf](2009/Afr%20J%20Bio8,%204140.pdf)

Abstract: Environmental pollution, mainly in the aquatic systems, due to developments in industry, is one of the most significant problems of this century. Many industrial wastewater streams contain heavy metals, which are of great environmental concern and must be removed prior to water discharge or water recycling. The present study aims to develop a simple and rapid procedure for lead(II) removal. Laboratory-scale adsorption experiments were conducted aiming to remove lead from water samples. They were based on using powdered activated carbon (PACI), which was prepared from olive stones generated, as plant wastes, and modified with aqueous oxidizing agent such as (NH4)2S2O8. The main parameters (pH, sorbent, lead concentrations, stirring times and temperature) influencing the sorption process in addition to the effect of some foreign ions were investigated. The results obtained indicated that the sorption of Pb2+ ions onto PACI is well described by the Langmuir, Freundlich and Dubinin-Radushkevich (D-R) adsorption models over the concentration range studied. Under the optimum experimental conditions employed, the removal of ca. 100% of Pb2+ ions was attained. The procedure was successfully applied to the removal of lead from aqueous and different natural water samples.

Keywords: Activated Carbon, Adsorption, Aqueous Solution, Carbon, Concentration, Copper(II), Discharge, Environmental, Experimental, Experiments, Flotation, Fly-Ash, Foreign Ions, Freundlich, Heavy Metals, Hexavalent Chromium, Industrial Wastewater, Ions, Kinetics and Water, Langmuir, Lead, Metals, Models, Modified, Modified Activated Carbon, Natural, Natural Water, Oleic-Acid, Olive Stones, Pb2+, pH, Plant, Pollution, Powdered Activated Carbon, Procedure, Recycling, Removal, Solution, Sorbent, Sorption, Sorption Process, Streams, Surfactant, Systems, Temperature, Wastewater, Water, Water Recycling, Water Samples

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Full Text: [2009\Afr J Bio8, 7138.pdf](2009/Afr%20J%20Bio8,%207138.pdf)

Abstract: In this paper, a new cation sorbent, which bore carboxyl and hydroxyl groups of tartaric acid (TA) derived from esterified wheat straw (EWS), was originally prepared by solid phase thermochemistry method. The isotherm, kinetics and thermodynamics of basic dye sorptions from aqueous solution onto EWS were investigated for the first time. Two basic dyes, methylene blue (MB) and crystal violet (CV) were selected as sorbates. The isothermal data correlated with the Langmuir model better than the Freundlich model. The maximum sorption capacity (Q(m)) of EWS for MB and CV was 129.87 and 112.36 mg/g, respectively. The equilibriums of dye sorptions were respectively reached about 13 and 18 h for MB and CV. The sorption processes could be described by the pseudo-second-order kinetic model and there were two intra-particle diffusion steps in the dye sorption processes. The thermodynamic study indicated that the dye sorptions were spontaneous and endothermic in nature.

Keywords: Aqueous Solution, Aqueous-Solution, Basic Dye, Basic Dyes, Capacity, Cation, Cationic Dyes, Crystal Violet, Data, Diffusion, Dye, Dyes, Endothermic, Equilibrium, First, Freundlich, Freundlich Model, Intra-Particle Diffusion, Intraparticle Diffusion, Isotherm, Isothermal, Kinetic, Kinetic Model, Kinetics, Kinetics and Thermodynamics, Langmuir, Langmuir Model, Malachite Green, MB, Methylene Blue, Methylene-Blue Adsorption, Model, Peanut Hull, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Reactive Dyes, Removal, Rice Husk, Solution, Sorbent, Sorption, Sorption Capacity, Straw, Tartaric Acid, Thermodynamic, Thermodynamic Studies, Thermodynamics, Time, Waste-Water

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Full Text: [2010\Afr J Bio9, 874.pdf](2010/Afr%20J%20Bio9,%20874.pdf)

Abstract: In this study, *Aspergillus wentii* was used as a biosorbent for the adsorption of methylene blue from aqueous solution. The effects of contact time, initial dye concentration, solution pH and temperature on biosorption were investigated. The contact time required (that is, the equilibrium time) for maximum dye biosorption was found to be 120 min. The amount of the dye biosorbed increased with increasing initial dye concentrations and solution pH, while it was decreasing with an increase in temperature. Percent biosorption was changed between 14.86 and 85.04 under all conditions studied. Desorption studies were performed by changing of the value pH among 3-10. Desorption was considerably affected by lower pH. The maximum percentage of desorption was found to be 29.51 at pH 3. Biosorption isotherm from equilibrium values followed Freundlich model.

Keywords: Adsorption, Aqueous Solution, Aspergillus Wentii, Biosorbent, Biosorption, Biosorption Isotherm, Concentration, Desorption, Dye, Dye Biosorption, Equilibrium, Freundlich, Freundlich Model, Isotherm, Kinetics, Methylene Blue, Model, Niger, Peat, Perlite, pH, Removal, Solution, Sorption, Temperature, Textile Dyes, Time, Treated Biomass, Value, Violet

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Full Text: [2010\Afr J Bio9, 5575.pdf](2010/Afr%20J%20Bio9,%205575.pdf)

Abstract: The purpose for this study is to de-color C.I. Acid Blue 40 simulated textile wastewater using chitosan and UV/TiO2 system. The methodology is to use chitosan biopolymer and UV/TiO2 to degrade textile wastewater and to measure the color removal by UV-visible spectrophotometer. The operational parameters are chitosan, TiO2, pH and reaction time. From the laboratory investigations, different efficiencies were observed according to different removal operating levels. Single chitosan of 2500 ppm dose was used to remove Acid Blue 40 textile wastewater and to obtain a better efficiency. TiO2 alone with UV light was also used with the dose of 2500 ppm to obtain a better efficiency. In acidity, both chitosan and TiO2 obtain better efficiencies under pH 4 operational condition. The best combination for UV/TiO2 system to de-color the 50 ppm Acid Blue 40 textile wastewater was TiO2 2500 ppm concentration with UV illumination at pH 4. The result shows that the de-colorization efficiency reached 98.8% elimination after 210 min of reaction time.

Keywords: Acid Blue 40, Acidity, Chitin, Chitosan, Chitosan Biopolymer, Color Removal, Concentration, Decolorization, Degradation, Dyes, Efficiency, Investigations, Measure, Methodology, pH, Phenol, Purpose, Removal, Spectrophotometer, Textile Wastewater, TiO2, UV, UV Light, UV, TiO2, Wastewater

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Full Text: [2010\Afr J Bio9, 8667.pdf](2010/Afr%20J%20Bio9,%208667.pdf)

Abstract: Magnetic MnFe2O4/bentonite nanocomposite was synthesized by chemical co-precipitation method. The product was characterized by X-ray diffraction (XRD) and Scanning electron microscope (SEM). XRD results indicated the presence of free quartz in bentonite. The magnetic ferrite MnFe2O4 has spinel structure. It is also found that the presence of bentonite in the magnetic composite has not made any changes in the spinel structure of MnFe2O4. SEM images of the sorbent shows nanocomposite with a uniform structure and nanochannels from 0.3 to 0.8 m mu in diameter having a surface area of 130 m2 g-1. The results also revealed that the composite has much higher catalytic activity than the bentonite. The process confirmed very fast kinetic and pseudo-second-order model for acid red 138 (AR138) from aqueous solutions. The adsorption of AR138 was strongly dependent on the pH of the medium, where the removal efficiency increased as the pH decreased in pH 2.

Keywords: Acid Red 138, Adsorbent, Adsorption, Aqueous Solutions, Aqueous-Solutions, Azo-Dye, Basic Dye, Bentonite, Carbon, Catalytic Activity, Changes, Chemical, Coir Pith, Composite, Coprecipitation, Efficiency, Kinetic, Magnetic, Magnetic Material, Model, Nanocomposite, pH, Powder, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Quartz, Removal, Removal Efficiency, SEM, Solutions, Sorbent, Spinel, Structure, Surface, Surface Area, Waste, Water, X-Ray, X-Ray Diffraction, XRD

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Full Text: [2010\Afr J Bio9, 8783.pdf](2010/Afr%20J%20Bio9,%208783.pdf)

Abstract: In this study, corn processing wastewater was used as a new low-cost substrate to produce Rhizopus oligosporus. Dried biomass of *R. oligosporus* was evaluated as a biosorbent for treatment of synthetically contaminated waters with Hg(II) ions. The biosorption process was carried out in a batch process and the effects of contact time (1 to 48 h), initial pH (2.0 to 7.0), initial metal ion concentration (20 to 100 mg/L) and temperature (20 to 38ºC) on the biosorption were investigated. Hg(II) ions concentration were measured with ICP-MS. The maximum adsorption capacity was determined at pH 6.0. The isothermal data of dried fungal biomass could be described well by the Langmuir equations and the Langmuir monolayer capacity had a mean value of 33.33 mg/g. Experimental results indicated that the pseudo-second order reaction model provided the best description of the data with a correlation coefficient 0.99 for different initial metal concentrations. This result indicates that chemical sorption might be the basic mechanism in this system.

Keywords: Adsorption, Aqueous-Solutions, Biosorbent, Biosorption, Cadmium(II), Copper, Corn-Processing Wastewater, Cu(II) Ions, Heavy-Metals, Mercury, Mercury, *Rhizopus oligosporus*, Sawdust, Sorption

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Full Text: [2010\Afr J Bio9, 9051.pdf](2010/Afr%20J%20Bio9,%209051.pdf)

Abstract: The removal of Cu(II) and Ni(II) from aqueous solution by physically pretreated (boiled, heated and autoclaved) Rosa centifolia distillation waste biomass was conducted in batch conditions. The obtained results revealed that initial metal ion concentration, kinetics, and temperature affected the adsorption capacity of the physically pretreated R. centifolia distillation waste biomass. The Cu(II) and Ni(II) equilibrium sorption data agreed well to Langmuir isotherm model and the sorption kinetics were accurately described by pseudo second order kinetic model. The Cu(II) and Ni(II) uptake capacities (mg g-1) of physical pretreated R. centifolia distillation waste biomass were in following order: boiled (66.91) > heated (52.51) > autoclaved (49.82) > native (42.68) and boiled (67.55) > heated (65.19) > autoclaved (58.09) > native (45.19), respectively. The nature of R. centifolia distillation waste biomass surface functionalities was analyzed by FTIR spectroscopy.

Keywords: Adsorption, Aqueous-Solution, Bicolor Wild Cocoyam, Biosorption, Cd2+, Copper, Cu(II), Equilibrium, FTIR, Golden Shower Biomass, Industrial-Waste, Ions, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Isotherm, Modeling, Ni(II), Nickel, Pretreatment, Removal, Rosa Centifolia, Sorption, Waste

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Full Text: [2011\Afr J Bio10, 3128.pdf](2011/Afr%20J%20Bio10,%203128.pdf)

Abstract: In the present study, free, carboxymethyl cellulose (CMC)-immobilized, polyvinyl alcohol (PVA)-alginate immobilized and chemically treated rice husk biomass was used for the biosorption of Everdirect Orange-3GL and Direct Blue-67 dyes. Maximum biosorption capacity of free, immobilized and hydrochloric acid treated biomass was observed for both dyes at low pH. Comparative study of free, immobilized and HCl treated biomass showed that, the HCl treated biomass exhibited more biosorption capacity (29.98 and 37.92 mg/g) for Everdirect Orange-3GL and Direct Blue-67, respectively. Equilibrium time was less for HCl treated biomass when compared with immobilized biomass. The Langmuir type 1 and 2 models were best fitted to experimental data for free, CMC, polyvinyl alcohol-alginate immobilized and HCl treated biomass in case of Everdirect Orange-3GL, while the equilibrium data of Direct Blue-67 followed the Langmuir type 2 isotherm. Pseudo-second-order and Elovich kinetic models illustrated good fitness to all types of biomasses showing chemisorption nature of biosorption. The amount of dyes sorbed (mg/g) increased with increase in temperature. The values of Gibbs free energy (ΔGº) showed that reaction was spontaneous at high temperature.

Keywords: Aqueous-Solution, Azo-Dye, Biosorption, Biosorption, Carboxymethyl Cellulose, Cellulose, Corynebacterium-Glutamicum, Direct Dyes, Dyes, Equilibrium, Heavy-Metals, Immobilization, Isotherm, Kinetic, Kinetic Models, Kinetics, Langmuir, Methylene-Blue, Orange Peel, pH, Pretreatments, Reactive Dyes, *Rhizopus-arrhizus*, Thermodynamics

? Sadaf, S. and Bhatti, H.N. (2011), Biosorption of Foron turquoise SBLN using mixed biomass of white rot fungi from synthetic effluents. *African Journal of Biotechnology*, **10** (62), 13548-13554.

Full Text: [2011\Afr J Bio10, 13548.pdf](2011/Afr%20J%20Bio10,%2013548.pdf)

Abstract: In the present study, biosorption of Foron turquoise SBLN using mixed biomass of white rot fungi was investigated in batch mode. The effect of process parameters such as pH of solution, medium temperature, biosorbent concentration, dye initial concentration, contact time etc. was investigated for enhanced removal of the dye. Maximum dye removal was observed at pH 2, biosorbent dose, 0.1 g/100 ml and temperature 30ºC. The equilibrium data were analyzed by commonly employed Langmuir and Freundlich isotherm equations. The results show that the equilibrium data were better described by Freundlich isotherm model as compared to Langmuir equation. The biosorption kinetic data were found to follow the pseudo-second-order model. The results therefore indicated that mixed biomass of white-rot fungi could be used as natural biosorbent to remove dyes from aqueous effluents.

Keywords: Aqueous-Solution, Biosorbent, Biosorption, Concentration, Coriolus Versicolor, Decolorization, Disperse Dye, Dye Removal, Equilibrium, Freundlich, Freundlich Isotherm Model, Fungi, Ganoderma Lucidum, Isotherm, Kinetic, Langmuir, Methylene-Blue, pH, Reactive Dye, Removal, Rhizopus-Arrhizus, Sorption, System, Temperature, Waste Biomass

# Title: African Journal of Business Management

Full Journal Title: [African Journal of Business Management](http://www.academicjournals.org/ajbm/Archive.htm)

ISO Abbrev. Title: Afr. J. Bus. Manag.

JCR Abbrev. Title: Afr J Bus Manage

ISSN: 1993-8233

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Language: English

Journal Country/Territory: Nigeria

Publisher: Academic Journals

Publisher Address: P O Box 5170-00200 Nairobi, Victoria Island, Lagos 73023, Nigeria

Subject Categories:

Business: Impact Factor 0.107, 77/77 (2008) SSCI; Impact Factor 1.105, 54/87 (2009) SSCI

Management: Impact Factor 0.107, 88/89 (2008) SSCI; Impact Factor 1.105, 58/112 (2009) SSCI

? Chen, Y.H., Chen, C.Y. and Lee, S.C. (2010), Technology forecasting of new clean energy: The example of hydrogen energy and fuel cell. *African Journal of Business Management*, **4** (7), 1372-1380.

Full Text: [2010\Afr J Bus Man4, 1372.pdf](2010/Afr%20J%20Bus%20Man4,%201372.pdf)

Abstract: Due to energy shortage, global warming and climate change, balanced development of energy security, economic growth, and environmental protection (3Es) has become a major energy policy issue and prompted the development of low-carbon economies. The goals of exploiting new clean energies, improving the efficiency of conventional energy sources, and improving renewable energy technologies have gathered considerable attention of governments worldwide. Among the many clean energies, hydrogen energy plays an important part in new clean energy fields nowadays. However, little has been done in discussing the technology forecasting for the hydrogen energy development. Therefore, this study predicts the technological S-curves for hydrogen energy and fuel cell technologies by integrating bibliometric and patent analysis into the logistic growth curve model, which includes generation, storage, proton exchange membrane fuel cell (PEMFC), solid oxide fuel cell (SOFC) and direct methanol fuel cell/direct alcohol fuel cell (DMFC/DAFC). Empirical analysis is via an expert survey and co-word analysis using the USPTO database to obtain useful data. The results demonstrate that technologies for generating and storing hydrogen have not yet reached technological maturity, and the fuel cell technology is either in the mature stage or approaching maturity.

Keywords: Bibliometric Analysis, Databases, Diffusion, Fuel Cell, Hydrogen Energy, Industry, S-Curves, Technology Forecasting

? Chang, C.C. and Ho, Y.S. (2010), Bibliometric analysis of financial crisis research. *African Journal of Business Management*, **4** (18), 3898-3910.

Full Text: [2010\Afr J Bus Man4, 3898.pdf](2010/Afr%20J%20Bus%20Man4,%203898.pdf); [2010\Afr J Bus Man-Chang.pdf](2010/Afr%20J%20Bus%20Man-Chang.pdf)

Abstract: The bibliometric analytical approach has not yet been applied in financial crisis research. The aim of the study was to apply bibliometric analysis to financial crisis publications in 362 journals listed in the four ISI subject categories of economics, finance business, business, and management in the Social Science Citation Index (SSCI). Analyzed parameters were publication language, document type, publication output, authorship, publication patterns, subject category distribution, region, country, publication institute, most frequently cited articles, and hot issues. This study demonstrates that the amount of research increased markedly during financial crises, especially during the Asian financial crisis and global financial crisis. Furthermore, the most frequently cited articles and topics associated with the currency crisis, policy, and banking crisis were popular during the Asian financial crisis and global financial crisis.

Keywords: Analysis, Approach, Asian, Authorship, Bibliometric, Bibliometric Analysis, Business, Citation, Country, Crisis, Currency Crises, Distribution, Distributions, Economics, ISI, Journals, Management, Policy, Publication, Publications, Research, Research Trend, Science, Science Citation Index, Scientometrics, Social Science Citation Index, SSCI, Web of Science

? Alam, G.M. (2011), A further editorial guideline for writing manuscript in the field of social science: A special perspective for *African Journal of Business Management* (AJBM). *African Journal of Business Management*, **5** (1).

Full Text: [2011\Afr J Bus Man5.pdf](2011/Afr%20J%20Bus%20Man5.pdf)

Abstract: With the breathtaking success of African Journal of Business Management-AJBM in the recent years, has become one of most commanding podiums for the scholar especially from the developing world. In 2009, not only its impact factor has increased substantially, but also one of its published papers “has been selected by Essential Science Indicators(SM) from Thomson Reuters as the most-cited paper in the research area of Economics and Business”. With its success, submissions have increased dramatically with an equal increased figure of rejection. Huge rejection is not good news for any party. It is now thus important to provide a better editorial guideline for research community to prepare their works making it more suitable and also to help them in targeting the right journal for appropriate readership and audience. This editorial is prepared with the consultation of more than 800 papers submitted from around the globe for the publication in AJBM. A portion of them are published, while a significant numbers are also rejected. Since, research community from Africa, Fareast, Middle-East and the Western world are contributing for AJBM. Every community has some strengths and weaknesses to offer lessons for others. Keeping this in mind, it is thus also important to have a common understanding about the research in business management and writing manuscripts. With an optimistic attitude, this editorial aims to provide a guideline for writing manuscript in the field of Social Science with a special focus on AJBM.

Keywords: Africa, AJBM, Attitude, Buffalo City Municipality, Consultation, Disabilities Travel Behaviors, Economics, Epistemological Foundation for Research, High-Technology Industry, Hypothesis, Research Questions, Impact, Impact Factor, Journal, Management, Methodology, Methods, Organizational Commitment, Papers, Private Higher-Education, Publication, Research, Research in Business Management, Research-and-Development, Results, Findings, Scholars, Academics, Science, Service Quality, Small Manufacturing Firms, Social, Social Science, South-Africa, Success, Supply Chain Management, Thomson Reuters, Writing

? Huang, C.Y. and Ho, Y.S. (2011), Historical research on corporate governance: A bibliometric analysis. *African Journal of Business Management*, **5** (2), 276-284.

Full Text: [2011\Afr J Bus Man5, 276.pdf](2011/Afr%20J%20Bus%20Man5,%20276.pdf); [2010\Afr J Bus Man-Huang1.pdf](2010/Afr%20J%20Bus%20Man-Huang1.pdf); [2010\Afr J Bus Man-Huang.pdf](2010/Afr%20J%20Bus%20Man-Huang.pdf)

Abstract: Bibliometric analysis provides historical information on research of trend and performance. A publication analysis was carried out using the related literature in the Social Science Citation Index (SSCI) from 1992 - 2008, collected from the web of Science databases of the Institute for Scientific Information (ISI). Articles of such literature were concentrated on the analysis by the scientific output and distribution of subject categories and journals. The author’s keywords were also analyzed to evaluate the research hotspots. The results from this analysis indicate that, yearly, production of the related scientific articles increased steadily over the investigation period and that in the year 2008, there was a peak. “Ownership structure”, “board of directors” and “executive compensation” were the three most used author’s keywords. In addition, the agency theory in historical corporate governance research was also discussed.

Keywords: Agency Theory, Asian Financial Crisis, Bibliometric, Bibliometric Analysis, Board-of-Directors, Citation, Corporate Governance, Databases, Economics, Finance Business, Firm, Impact, Information, Journals, Literature, Market, Ownership, Publication, Research, Research Hotspots, Rules, Sarbanes-Oxley Act, Science Citation Index, Scientometrics, Trend

? Kraus, S. (2011), State-of-the-art current research in international entrepreneurship: A citation analysis. *African Journal of Business Management*, **5** (3), 1020-1038.

Full Text: [2011\Afr J Bus Man5, 1020.pdf](2011/Afr%20J%20Bus%20Man5,%201020.pdf)

Abstract: This article applies a literature-based analysis in its discussion of the research field of international entrepreneurship. It uses bibliometric citation analysis as its primary investigative method. The basis of the citation analysis was formed by articles coming from a number of electronic publication databases that contained the term “international entrepreneurship” in their titles, and which could thus be clearly categorized into this research field. The 40 publications identified in this manner resulted in a database of 2,659 citations. Upon observing the citation analysis and the clusters of topics that result, it becomes clear that the research on international entrepreneurship is influenced by the scientific fields of international business, entrepreneurship theory, SME internationalization, and born global/international new venture theory.

Keywords: International Entrepreneurship, State of the Art, Bibliometrics, Citation Analysis, Venture Internationalization, Future-Directions, Business Research, Market Entry, Firms, Performance, Behavior, Bibliometrics, Dynamics, Trends

? Kraus, S. (2011), State-of-the-art current research in international entrepreneurship: A citation analysis. *African Journal of Business Management*, **5** (3), 1020-1038.

Full Text: [2011\Afr J Bus Man5, 1020.pdf](2011/Afr%20J%20Bus%20Man5,%201020.pdf)

Abstract: This article applies a literature-based analysis in its discussion of the research field of international entrepreneurship. It uses bibliometric citation analysis as its primary investigative method. The basis of the citation analysis was formed by articles coming from a number of electronic publication databases that contained the term “international entrepreneurship” in their titles, and which could thus be clearly categorized into this research field. The 40 publications identified in this manner resulted in a database of 2,659 citations. Upon observing the citation analysis and the clusters of topics that result, it becomes clear that the research on international entrepreneurship is influenced by the scientific fields of international business, entrepreneurship theory, SME internationalization, and born global/international new venture theory.

Keywords: International Entrepreneurship, State of the Art, Bibliometrics, Citation Analysis, Venture Internationalization, Future-Directions, Business Research, Market Entry, Firms, Performance, Behavior, Bibliometrics, Dynamics, Trends

? Tu, P.P.N. (2011), A study of influential authors, works and research network of consumer behavior research. *African Journal of Business Management*, **5** (23), 9838-9854.

Full Text: [2011\Afr J Bus Man5, 9838.pdf](2011/Afr%20J%20Bus%20Man5,%209838.pdf)

Abstract: With the proliferation of consumer behavior research in recent decades, the ability to effectively identify the most influential and representative collection of research articles had become significantly important. Research in the consumer behavior area had developed rapidly, but no recent studies had examined contemporary consumer behavior research. This paper employed author co-citation analysis, a bibliometric methodology and social network analysis methodology to highlight the most influential authors, to analyze citation relationships, to exploit changes in the intellectual base and to show trends and patterns in the consumer behavior field over two consecutive time periods, 1989 to 1998 and 1999 to 2008. In order to analyze the dynamic intellectual structure of consumer behavior research, author co-citation analysis was conducted of 16,536 references from 606 articles found in the SSCI and SCI databases from 1989 to 2008. In addition, factor analysis was used to examine the breadth of the authors’ research areas. The aims of this paper were twofold: to provide a valuable direction for future consumer behavior research, and to propose an objective means of establishing the relative importance of different knowledge nodes in the recent development of the consumer behavior field.

Keywords: Analysis, Author, Author Co-Citation Analysis, Authors, Behavior, Bibliometric, Bibliometric Analysis, Citation, Co-Citation Analysis, Cocitation, Cocitation Analysis, Consciousness, Consumer, Consumer Behavior, Consumption, Databases, Development, Electronic Marketplaces, Factor-Analysis, Intellectual Structure, Knowledge, Knowledge of Network, Methodology, Modeling Approach, Network, Operations Management, Planned Behavior, Research, SCI, Self, Social, Social Network, Social Network Analysis, SSCI, Themes, Trends

? Curado, C., Oliveira, M. and Maçada, A.C.G. (2011), Mapping knowledge management authoring patterns and practices. *African Journal of Business Management*, **5** (22), 9137-9153.

Full Text: [2011\Afr J Bus Man5, 9137.pdf](2011/Afr%20J%20Bus%20Man5,%209137.pdf)

Abstract: This paper examines the literature on knowledge management (KM) in order to identify the typical authoring patterns and the focus of the content of published research. The study explores the argument that the inter-organizational level of analysis is explored less frequently than the intra-organizational level. The article reports on KM researchers and practices based on evidence from six journals ranked in the journal citation report covering several decades of publications. Based on this review, articles can generally be seen to have two co-authors from two different universities within the same country. The study confirms that published research is mainly empirical; largely adopting the intra-organizational level of analysis, with the people element being the least explored comparing to technology and process elements. This research gap represents an opportunity for authors to contribute with studies focusing on the inter-organizational level.

Keywords: Analysis, Authors, Citation, Competitive Advantage, Document Collection, Empirical-Examination, Indigenous Knowledge, Information-Systems Research, Inter-Organizational, Intra-Organizational, Journal, Journals, Knowledge, Knowledge Management, Literature, Management, Organizational Knowledge, People, Process, Processes, Product Development, Publications, Published Research, Reference Discipline, Research, Research Mapping, Researchers, Review, Scientometric Analysis, Software-Development, Technology, Universities

# Title: African Journal of Environmental Science & Technology

Full Journal Title: African Journal of Environmental Science & Technology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

# Title: African Journal of Library Archives and Information Science

Full Journal Title: [African Journal of Library Archives and Information Science](http://vnweb.hwwilsonweb.com/hww/Journals/getIssues.jhtml?sid=HWW:OMNIS&issn=0795-4778)

ISO Abbrev. Title: Afr. J. Libr. Archiv. Inf. Sci.

JCR Abbrev. Title: Afr J Libr Arch Info

ISSN: 0795-4778

Issues/Year: 2

Language: English

Journal Country/Territory: Nigeria

Publisher: Archlib & Information Services Ltd

Publisher Address: Po Box 20492, Ibadan 00000, Nigeria

Subject Categories:

Information Science & Library Science: Impact Factor 0.129, 60/65 (2009)

? Nwagwu, W.E. (2007), A comparative study of the productivity of HIV/AIDS literature on Nigeria and South Africa in Medline and Science Citation Index. *African Journal of Library Archives and Information Science*, **17** (1), 1-13.

Full Text: [2007\Afr J Lib Arc Inf Sci17, 1.pdf](2007/Afr%20J%20Lib%20Arc%20Inf%20Sci17,%201.pdf)

Abstract: Bibliographic data on HIV/AIDS literature on Nigeria and South Africa were drawn from Medline and Science Citation Index (SCI) respectively, covering the period 2000-2004, to study the productivity of literature produced by ‘all authors’, first authors, ‘non-collaborative authors’ and ‘co-authors’ using Lotka Law. The first authors in Medline did not yield usable result for Nigeria, but the characteristic exponents for the other categories of authors are higher for Nigeria (6 ranging between 2 and 4) than South Africa (6 ranging between 2 and 3). Based on SCI, the model yielded only useful result for the Nigerian co-authors, whereas all other categories of authors yielded exponents that ranged between 1 and 3 for South Africa. We deduce that Medline appears to accommodate HIV/AIDS literature emanating from Nigeria more than it does those coming-from South Africa, while the opposite is the case with SCI Finally, scientific productivity in Nigeria is more significant when assessed based on Medline than SCI. The reverse is the case for South Africa.

Keywords: Africa, Authors, Citation, Co-Authors, Communication, Comparative Study, Data, First, HIV, AIDS, Literature, Lotka, Model, Nigeria, Patterns, Productivity, SCI, Science Citation Index, Scientific Productivity, South Africa

? Sam, J. (2008), An analysis of Ghana library journal: A bibliometric study. *African Journal of Library Archives and Information Science*, **18** (1), 55-62.

Full text: [2008\Afr J Lib Arc Inf Sci18, 55.pdf](2008/Afr%20J%20Lib%20Arc%20Inf%20Sci18,%2055.pdf)

Abstract: This paper presents the results of an analysis of articles published in the Ghana Library Journal over a seven-year period from 2000 to 2006. The majority of the items cited were journals (44.5%), followed by books (32.5%), and reports (9.4%). Current sources of information were about 62.9% of the journals and 48.8% of the books appearing in the reference lists were published in 1990 or later Only four of the top twenty-two journals cited frequently were of African origin, the rest were European or US-based. The subject area most researched was academic libraries. Majority of the authors were from universities. The journal did not attract many authors from outside Ghana. Recommendations are made on how to the journal could attract authors from outside Ghana.

Keywords: Africa, Analysis, Bibliometric, Bibliometric Study, Collection Development, Ghana, Information, Journal, Journals, Origin, Sources, Sources of Information, Trends, Universities

? Onyancha, O.B. (2009), A citation analysis of sub-saharan African library and information science journals using Google Scholar. *African Journal of Library Archives and Information Science*, **19** (2), 101-116.

Full text: [2009\Afr J Lib Arc Inf Sci19, 101.pdf](2009/Afr%20J%20Lib%20Arc%20Inf%20Sci19,%20101.pdf)

Abstract: In bibliometrics, the numbers of research articles and citations constitute the main measurement indicators of research output and impact respectively This study evaluates the library and information science/studies (LIS) Journals published in sub-Saharan African countries in order to assess their performance. Drawing its data from Google Scholar, the paper compares the performance of 13 LIS,journals using the following indicators: number of publications: average number of records; number of citations; citations per year; citations per article; citedness and uncitedness of the records published in each journal: h-index and g-index: and citation impact factor The paper also identifies journals with the most cited works and ranks the journals according to the above measurement indicators. Results indicate that publication of LIS journals in Sub-Saharan Africa is a relatively recent practice; a number of journals have not published any issues for close to 5 years; some Journals have ceased publication: there is irregular publication of journals; there are about five core LIS journals in the region: AJLAIS was the most highly cited journal, but the most influential journals in terms of the IF include SAJLIS. Innovation and Mousaion. The challenges faced by journal publishers and researchers in sub-Saharan Africa, as well as recommendations on improving the visibility and impact of journals in the region and internationally, are outlined.

Keywords: Informetrics, Citation Analysis, Library and Information Science Journals, Journal Productivity, Impact Analysis, Impact Factor, Index, Databases

? Okafor, V.N. and Dike, V.W. (2010), Research output of academics in the science and engineering faculties of federal universities in Southern Nigeria. *African Journal of Library Archives and Information Science*, **20** (1), 41-51.

Full text: [2010\Afr J Lib Arc Inf Sci20, 41.pdf](2010/Afr%20J%20Lib%20Arc%20Inf%20Sci20,%2041.pdf)

Abstract: This paper analysed the research output of Introduction academics in the science and engineering faculties of Federal Government-owned universities in Nigeria. It explored their level of research output during 1997-2006 in terms of the publication of journal articles and linked research and publication trends with place of publication and journal title. The stratified random sampling technique was used to select six out of the 13 Federal universities in southern Nigeria. Data on research output were collected through a questionnaire survey of the academics. In all, 435 copies of questionnaire were distributed to the academics, out which 353 copies were returned and only 291 were found usable for the analyses. The study revealed that 30.6% of the academics published between 0-4 journal articles; that only 2.7% of them published 30 or more journal articles during the period; and that as many as 42.1% did not have any article in overseas journals. The study recommends that Nigerian governments, university administrators and other stakeholders in scientific and technological research should improve the research environment in the universities by providing essential research resources. The National University Commission should establish a database of research publications by Nigerian academics to facilitate access to and analysis of data on research productivity.

Keywords: Academics, Articles, Bibliometrics, Database, Engineering, Environment, Journal, Journals, Lotka’s Law, Productivity, Publication, Publications, Questionnaire, Research, Research Output, Research Productivity, Sampling, Science, Trends, Universities, University

? Onyancha, O.B. (2011), Research collaborations between South Africa and other countries, 1986-2005: An informetric analysis. *African Journal of Library Archives and Information Science*, **21** (2), 99-112.

Full text: 2011\Afr J Lib Arc Inf Sci21, 99.pdf

Abstract: The paper reports the findings of an informetric study of the countries with which South Africa collaborates in research. The study period spans 20 years (10 years each during and after the apartheid era). Data were extracted from the Thomson Reuters citation indexes, namely: Science Citation Index (SCI), Social Sciences Citation Index (SSCI) and Arts and Humanities Citation Index (ANCI). Among the findings, it was observed that multiple-country-author papers, as well as the number of collaborating countries are 077 the rise since 1986. The USA topped the list of the countries outside Africa collaborating with South Africa while Zimbabwe topped the list of African countries. However, the strength of research collaboration was low for both categories of countries. Regarding impact, international collaboration yielded higher average citations per paper than continental collaboration. The study concludes that there are many Unique research areas in which African countries can collaborate, and recommends that these areas should form themes along which scholars in Africa could conduct collaborative research.

Keywords: Africa, African Countries, AIDS, Arts, Citation, Citation Indexes, Citations, Collaboration, Geographical Proximity, Humanities, Impact, Indexes, International Collaboration, Low, Papers, Research, Research Collaboration, Research Impact, SCI, Science, Science Citation Index, Sciences, Social Sciences, Social Sciences Citation Index, South Africa, Ssci, Strength, Thomson Reuters, USA

# Title: African Journal of Medicine and Medical Sciences

Full Journal Title: African Journal of Medicine and Medical Sciences

ISO Abbreviated Title: Afr. J. Med. Med. Sci.

JCR Abbreviated Title: Afr J Med Med Sci

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Dixon, R.A. and Thompson, J.S. (1993), Base-line village health profiles in the E.Y.N. rural health programme area of north-east Nigeria. *African Journal of Medicine and Medical Sciences*, **22** (2), 75-80.

Abstract: In order to document the health profile of rural farming communities not yet reached by the EYN Rural Health Programme, based at Garkida, Nigeria, four villages were surveyed by a Sheffield medical student who lived for several weeks in each village, working alongside local women. Villagers helped in separate surveys of village environment and water sources, of compound (household) hygiene, of male heads of compounds, of women of childbearing age, and of children. Stagnant rain-water ponds and widespread animal faeces litter were the main village environmental hazards and hardly any satisfactory pit latrines were seen. One person in nearly 2000 surveyed treated the drinking water. Infant mortality was estimated at 200 per 1000. Commonly reported health problems included abdominal pain, coughs and colds, filariasis, diarrhoea, scabies, worms, blood in stool, fever, back pain and eye infections. In each village fewer than 20% of the men and fewer than 10% of the women had received any education. Average completed family size was 6 or 7 children per woman with 3 other non-surviving children. The causes of malaria and of diarrhoea were each known by fewer than 10% of mothers in each village. About a quarter of the under fives had suffered from diarrhoea in the past fortnight, a quarter had received any immunisation and one fifth were at least mildly malnourished. One quarter of children aged 6-12 years attended school.

# Title: Age and Ageing

Full Journal Title: [Age and Ageing](http://ageing.oxfordjournals.org/archive/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Campbell, S.E., Seymour, D.G. and Primrose, W.R. (2004), A systematic literature review of factors affecting outcome in older medical patients admitted to hospital. *Age and Ageing*, **33** (2), 110-115.

Full Text: [2004\Age Age33, 110.pdf](2004/Age%20Age33,%20110.pdf)

Abstract: Introduction: the ACMEplus project aims to devise a standardised system for measuring case-mix and outcome in older patients admitted to hospitals in different parts of Europe for primarily ‘medical’ (i.e. not surgical or psychiatric) reasons. As a first step in this project, a systematic review was carried out to identify, factors which had a significant influence on outcome in such patients. Methods: the systematic search used Medline 1966-2000, Cinahl 1982-2000, Web of Science 1981-2000, reference lists of relevant papers and a hand search of Age and Ageing 1974-2000. A six-category grading system was devised to classify the 313 identified papers with regard to their relevance to the ACMEplus project, study design and power. The analysis of the 14 ‘category 1’ papers is presented. Results: the main areas of assessment of case-mix were function, cognition, depression, illness severity, nutrition, social elements, aspects of diagnosis and demographic details. Statistically significant predictors, for the four outcome measures, listed below were: i. For length of stay: functional status score, illness severity, cognitive Score, poor nutrition, comorbidity score, diagnosis or presenting illness, polypharmacy, age and gender. ii. For mortality: functional status score, illness severity, cognitive score, comorbidity score, diagnosis or presenting illness, polypharmacy, age and gender. iii. For discharge destination: functional status score, cognitive score, diagnosis or presenting illness and age. iv. For readmission rate: functional status score, illness severity, co-morbidity, polypharmacy diagnosis or presenting illness and age. Conclusions: factors affecting outcome in older medical patients are complex. When looking at outcomes of hospital admission in older people it is important not just to look at routinely available statistics such as age, gender and diagnosis but also to take into account multifaceted aspects such as functional status and cognitive function.

Keywords: Acme, Admission, Age, Aged (80 Years And Over), Analysis, Assessment, Care, Case-Mix System, Cognition, Comorbidity, Depression, Diagnosis, Elderly, Elderly Patients, Europe, Functional, Functional Status, Gender, Geriatric-Patients, Hospital, Hospital Admission, Hospitals, Length, Length of Stay, Literature, Literature Review, Medical, Methods, Mortality, Nutrition, Older Patients, Older People, Outcome, Outcome Assessment (Health Care), Outcomes, Papers, Prognosis, Prospective Studies, Review, Science, Social, Statistics, Stay, Surgical, Systematic, Systematic Literature Review, Systematic Review, Web of Science

? Borst, S.E. (2004), Interventions for sarcopenia and muscle weakness in older people. *Age and Ageing*, **33** (6), 548-555.

Full Text: [2004\Age Age33, 548.pdf](2004/Age%20Age33,%20548.pdf)

Abstract: Objective: three major strategies have been tested for combating the losses in muscle mass and strength that accompany ageing. Those strategies are testosterone replacement for men, growth hormone replacement and resistance exercise training. This review will cover the risks and benefits associated with each of these interventions. Methods: searches of PubMed and Web of Science through May 2004 yielded 85 relevant citations for the following descriptors: sarcopenia, aging/ageing, elderly, testosterone, hormone replacement, growth hormone, resistance training, exercise, muscle mass, nutrition and strength. Results and conclusions: testosterone replacement in elderly hypogonadal men produces only modest increases in muscle mass and strength, which are observed in some studies and not in others. Higher doses have not been given for fear of accelerating prostate cancer. Growth hormone replacement in elderly subjects produces a high incidence of side-effects, does not increase strength and does not augment strength gains resulting from resistance training. Some alternate strategies for stimulating the growth hormone/insulin-like growth factor (IGF) pathway continue to hold promise. The latter include growth hormone releasing hormone (GHRH) and the complex of IGF-I with its major circulating binding protein (IGF-I/IGFBP-3). Resistance training remains the most effective intervention for increasing muscle mass and strength in older people. Elderly people have reduced food intake and increased protein requirements. As a result, adequate nutrition is sometimes a barrier to obtaining full benefits from resistance training in this population.

Keywords: Ageing, Body-Composition, Cancer, Citations, Elderly, Elderly-Men, Exercise, Gene-Expression, Growth Hormone, Human Growth-Hormone, Hypogonadal Men, Intervention, Interventions, Methods, Muscle Atrophy, Nutrition, Older People, Physical Performance, Prostate Cancer, Pubmed, Resistance, Resistance Exercise, Resistance Training, Review, Sarcopenia, Science, Skeletal-Muscle, Strength, Testosterone, Testosterone Replacement, Training, Web of Science

? Mold, F., Fitzpatrick, J.M. and Roberts, J.D. (2005), Minority ethnic elders in care homes: A review of the literature. *Age and Ageing*, **34** (2), 107-113.

Full Text: [2005\Age Age34, 107.pdf](2005/Age%20Age34,%20107.pdf)

Abstract: Background: health and social care services are required to provide quality service provision to meet all older people’s needs, including any needs specific to minority ethnic groups. The heterogeneity of the population, however, highlights the need to offer a range of services that reflect people’s language, cultural and religious differences. Objectives: this paper reviews the literature concerned with minority ethnic elders in care homes. Methods: systematic searches were conducted using the following online databases: Web of Science, Pub Med, Sociological Abstracts, Social Sciences Index, AMED, British Nursing Index, Medline, PsycInfo and CINAHL. Independent reviewers undertook a structured assessment of each piece of literature. Data extraction and analysis were in accordance with established methods. Findings: the literature has been classified into two key areas. First, issues arising from international literature, including factors relating to access, equality and workforce issues, care satisfaction and placement decision-making. The second area focuses on the issues emerging from the UK literature. Issues of particular concern include barriers to care provision for minority ethnic older people, loss of independence and the recognition of cultural needs. Conclusion: the review indicates how problems remain in ensuring the delivery of best-quality long-term care to ethnic elders in care homes. The review also highlights the absence of studies focusing on the perception of care from residents’ perspectives and their involvement in making placement and care decisions.

Keywords: Analysis, Assessment, Barriers, Care Homes, Databases, Decision Making, Decision-Making, Health and Social Care, Homes, Involvement, Literature, Long-Term Care, Methods, Minority Ethnic Elders, Nursing, Older People, People, Perception, Pub Med, Residents, Review, Science, Social, Social Sciences, Systematic, UK, Web of Science

? Burt, J. and Raine, R. (2006), The effect of age on referral to and use of specialist palliative care services in adult cancer patients: A systematic review. *Age and Ageing*, **35** (5), 469-476.

Full Text: [2006\Age Age35, 469.pdf](2006/Age%20Age35,%20469.pdf)

Abstract: Objective: to investigate variations in the use of specialist palliative care (SPC) services for adult cancer patients, in relation to age. Design: systematic review of studies examining use of or referral to SPC services in adult cancer patients. Search strategy and selection criteria: six electronic databases (Medline, Embase, Web of Science, HMIC, SIGLE and AgeInfo) were searched for studies published between 1966 and March 2005, and references in the articles identified were also examined. Inclusion criteria were all studies which provided data on age in relation to use of or referral to SPC. Two reviewers independently selected studies, extracted data and assessed methodological quality according to defined criteria. Main outcome measures: use of or referral to SPC services, determined from all sources of report (patient, informal carer, health care professional, health care records). Results: 14 studies were identified. All reported a statistically significant lower use of SPC among older cancer patients (65 and above or older) at a univariate level [crude odds ratios ranged from 0.33 (0.15-0.72) to 0.82 (0.80-0.82)]. However, there were important methodological weaknesses in all of the studies identified; most crucially, studies failed to consider variations in use in relation to need for SPC. Conclusions: there is some evidence that older people are less likely to be referred to, or to use, SPC. These findings require confirmation in studies using prospectively collected data which control for patient’s need for SPC.

Keywords: Adult, Age Factors, Breast, Cancer, Control, Coverage, Databases, Death, Elderly, Equity, Health, Health Care, Home, Hospice Use, Life, Need, Older People, Oncology, Outcome, Palliative Care, Professional, Review, Science, Search Strategy, Specialist Palliative Care, Strategy, Symptoms, Systematic, Systematic Review, Utilisation, Web of Science

? Fudge, N., Wolfe, C.D.A. and Mckevitt, C. (2007), Involving older people in health research. *Age and Ageing*, **36** (5), 492-500.

Full Text: [2007\Age Age36, 492.pdf](2007/Age%20Age36,%20492.pdf)

Abstract: Background it is a UK policy requirement to involve patients and the public in health research as active partners. Objective we reviewed published reports of studies which involved older people in commissioning, prioritising, designing, conducting or disseminating research. Search strategy and selection criteria systematic searches of databases (PubMed, SCI-EXPANDED, SSCI, AHCI, ASSIA, Embase, CINAHL and Medline) for English language studies published between 1995 and 2005 which had involved older people as partners in the reserch process as opposed to research subjects. Articles were reviewed by two authors using a standardised matrix for data extraction. Results thirty studies were included and classified according to the stage in the research process in which older people were involved. Barriers to involving older people were: cultural divisions, language barriers, research skills capacity, ill health, time and resources. Four of the studies had been formally evaluated to identify the impact of involvement. Evaluation focussed on the impact on participants rather than on impact on research processes and outcomes. Benefits to participants included: increased knowledge, awareness and confidence, meeting others in similar situations, empowering older people to become active in their community regarding decisions/policies which affect them. Conclusions factors hindering the involvement of older people in research were the same as reported factors hindering involvement of younger people, suggesting that age, per se, is not a barrier. To demonstrate the impact of user involvement on research quality, the definition of user involvement requires clarification, and systematic evaluation of research involving older people needs to be developed.

Keywords: Agenda, Capacity, Community, Consumer Involvement, Consumer Participation, Design, Elderly, Older People, Research, Systematic Review, User Involvement

? Luppa, M., Luck, T., Weyerer, S., Konig, H.H., Brahler, E. and Riedel-Heller, S.G. (2010), Prediction of institutionalization in the elderly. A systematic review. *Age and Ageing*, **39** (1), 31-38.

Full Text: [2010\Age Age39, 31.pdf](2010/Age%20Age39,%2031.pdf)

Abstract: Design: relevant articles were identified by searching the databases MEDLINE, Web of Science, Cochrane Library and PSYNDEXplus. Studies based on population-based samples with prospective study design and identification of predictors by multivariate analyses were included. Quality of studies and evidence of predictors were determined. Results: thirty-six studies were identified; one-third of the studies were of high quality. Predictors with strong evidence were increased age, low self-rated health status, functional and cognitive impairment, dementia, prior NHP and a high number of prescriptions. Predictors with inconsistent results were male gender, low education status, low income, stroke, hypertension, incontinence, depression and prior hospital use. Conclusions: findings suggested that predictors of NHP are mainly based on underlying cognitive and/or functional impairment, and associated lack of support and assistance in daily living. However, the methodical quality of studies needs improvement. More theoretical embedding of risk models of NHP would help to establish more clarity in complex relationships in using nursing homes.

Keywords: Admission, Cochrane, Community, Databases, Death, Dementia, Depression, Education, Elderly, Follow-up, Functional, Gender, Health Status, Homes, Hospital, Hypertension, Income, Incontinence, Institutionalization, Long-Term-Care, Medline, NHA, Nursing, Nursing Home Admission, Nursing Home Placement, Nursing Homes, Nursing-Home Placement, Old Age, Older-Adults, Prediction, Quality, Representative Sample, Review, Risk, Risk-Factors, Science, Stroke, Systematic, Systematic Review, Web of Science

? Forster, A., Lambley, R. and Young, J.B. (2010), Is physical rehabilitation for older people in long-term care effective? Findings from a systematic review. *Age and Ageing*, **39** (2), 169-175.

Full Text: [2010\Age Age39, 169.pdf](2010/Age%20Age39,%20169.pdf)

Abstract: Design: systematic review of randomised controlled trials. Data sources: The Cochrane Central Register of Controlled Trials, Medline, EMBASE, AMED, CINAHL, PEDro, British Nursing Index, ASSIA, IBSS, PsychINFO, DARE, HMIC, NHS EED, HTA, Web of Science, AsLib Index to UK Theses and Dissertation Abstracts, the National Research Register, Medical Research Council Register, CRIB, Current Controlled Trials and HSRPRoj. Trials: all randomised trials investigating physical rehabilitation for people permanently resident in long-term care aged >= 60 years. The primary outcome was measures of activity restriction. Results: 49 trials were identified involving 3,611 subjects with an average age of 82 years. Intervention duration was typically 12 weeks with a treatment intensity of three 30-min sessions per week. Exercise was the main component of the interventions. The mean attendance rate for 17 studies was 84% (range 71-97%). Thirty-three trials, including the nine trials recruiting over 100 subjects, reported positive findings, mostly improvement in mobility but also strength, flexibility and balance. Conclusion: physical rehabilitation for older people in long-term care is acceptable and potentially effective. Larger scale studies are needed to confirm the findings and should include longer term follow-up and assessment for possible harms.

Keywords: Aged, Assessment, Balance, Cochrane, Elderly, Embase, Exercise, Follow-up, Intervention, Interventions, Long-Term Care, Medical Research, Nursing, Older People, Outcome, Primary, Rehabilitation, Research, Review, Science, Systematic, Systematic Review, Treatment, UK, Web of Science

? Horsman, M., Suto, M., Dudgeon, B. and Harris, S.R. (2010), Ageing with cerebral palsy: Psychosocial issues. *Age and Ageing*, **39** (3), 294-299.

Full Text: [2010\Age Age39, 294.pdf](2010/Age%20Age39,%20294.pdf)

Abstract: Objective: the purpose of this narrative review is to critically examine studies that have addressed needs for social support, as well as issues affecting morale, self-efficacy, health attitudes, employment and sense of coherence (SOC) in adults ageing with CP. Design: a systematic and detailed search of the literature was conducted. Methods: searches of CINAHL (1982-present), ERIC, PubMed (1950-present), MEDLINE (Ovid) and Web of Science databases, as well as the American Academy of Cerebral Palsy and Developmental Medicine website, were conducted. Key search terms included ‘cerebral palsy and ageing’, ‘adults with cerebral palsy’, ‘secondary conditions’, ‘functional loss’, ‘health’ and ‘psychosocial’. Nine studies were recovered that described psychosocial consequences of living with a lifespan disability. We used McMaster University’s Guidelines for Critical Review Form - Quantitative and Qualitative Studies to evaluate the studies. Results: psychosocial issues of concern to adults ageing with CP include the need for social support, self-acceptance and acceptance by others; the need for accommodations in the workplace and the environment; and SOC of adults ageing with CP. Conclusions: several studies concluded that adults with CP need greater knowledge and understanding to enhance decision-making processes about their health. The studies reviewed also provide knowledge for healthcare and social service providers who care for adults with CP to better understand how psychosocial health can be preserved during the ageing process.

Keywords: Adults, Ageing, Cerebral Palsy, Critical, Databases, Decision Making, Decision-Making, Disabilities, Elderly, Employment, Environment, Experiences, Functional, General-Population, Health, Health Attitudes, Knowledge, Literature, Locomotion, Medline, Methods, Psychosocial, Pubmed, Review, Science, Self-Efficacy, Social, Systematic, Web of Science, Women

? Roberts, H.C., Denison, H.J., Martin, H.J., Patel, H.P., Syddall, H., Cooper, C. and Sayer, A.A. (2011), A review of the measurement of grip strength in clinical and epidemiological studies: Towards a standardised approach. *Age and Ageing*, **40** (4), 423-429.

Full Text: [2011\Age Age40, 423.pdf](2011/Age%20Age40,%20423.pdf)

Abstract: Methods: a literature search was conducted to review articles describing the measurement of grip strength listed in Medline, Web of Science and Cochrane Library databases up to 31 December 2009. Results: there is wide variability in the choice of equipment and protocol for measuring grip strength. The Jamar hand dynamometer is the most widely used instrument with established test-retest, inter-rater and intra-rater reliability. However, there is considerable variation in how it is used and studies often provide insufficient information on the protocol followed making comparisons difficult. There is evidence that variation in approach can affect the values recorded. Furthermore, reported summary measures of grip strength vary widely including maximum or mean value, from one, two or three attempts, with either hand or the dominant hand alone. Conclusions: there is considerable variation in current methods of assessing grip strength which makes comparison between studies difficult. A standardised method would enable more consistent measurement of grip strength and better assessment of sarcopenia. Our approach is described.

Keywords: Assessment, Cochrane, Databases, Elbow, Elderly, Grip Strength, Hand Strength, Information, Literature, Measurement, Metaanalysis, Methods, Mortality, Physical Capability, Pinch Strength, Position, Protocol, Reference Values, Reliability, Review, Sarcopenia, Sarcopenia, Science, Variability, Web of Science

# Title: Ageing and Society

Full Journal Title: [Ageing and Society](http://journals.cambridge.org/action/displayJournal?jid=ASO)

ISO Abbreviated Title: Ageing Soc.

JCR Abbreviated Title: Ageing Soc

ISSN: 0144-686x

Issues/Year: 6

Journal Country/Territory: England

Language: English

Publisher: Cambridge Univ Press

Publisher Address: 40 West 20th St, New York, NY 10011-4221

Subject Categories:

Gerontology: Impact Factor 0.542 / (2002)

? Warnes, A.M. (1993), Being old, old-people and the burdens of burden. *Ageing and Society*, **13**, 297-338.

Abstract: Burden is today often applied to elderly people in two senses, for the fiscal load of income support and health and social care costs, and for notions and scales of care-giving effort and stress. It does not however convey straightforward meanings for its understanding is affected by two millenia of metaphorical and rhetorical usage. The use of burden tends to simplify relationships, whether between age-groups of a population or between a carer and an elderly person, and it communicates senses of a nuisance and an excessive charge. Portentous implications are invoked from biblical senses and derogatory overtones are strengthened by association, earlier this century, with racial stereotyping. An etymological survey reveals many sources of the word’s versatility and rhetorical power. Important extensions of usage towards the two contemporary gerontological applications are then studied. A bibliometric examination of the surge in the word’s social science use since the early 1980s is undertaken, and the paper concludes with a discussion of current usage as evidence of current attitudes towards, and constructions of, old age on the part of politicians and policy analysts.

Keywords: Age, Bibliometric, Caregivers, Dementia, Science

# Title: Ageing Research Reviews

Full Journal Title: Ageing Research Reviews

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Baert, V., Gorus, E., Mets, T., Geerts, C. and Bautmans, I. (2011), Motivators and barriers for physical activity in the oldest old: A systematic review. *Ageing Research Reviews*, **10** (4), 464-474.

Full Text: [2011\Age Res Rev10, 464.pdf](2011/Age%20Res%20Rev10,%20464.pdf)

Abstract: Worldwide, people engage insufficiently in physical activity, particularly subjects aged 80 years and over. For optimal life-style campaigns, knowledge of motivators and barriers for physical activity is mandatory. Given their specific needs, it is conceivable that these would be different for the oldest old compared to younger subjects. Pubmed, Web of Science and Psychinfo were systematically screened for articles reporting motivators and barriers for physical activity. Papers were excluded if data regarding elderly aged >79 years were absent. Forty-four relevant articles were included, involving a total of 28,583 subjects. Sixty one motivators and 59 barriers for physical activity in the elderly were identified, including those who are relevant for persons aged 80 years and over. Based on the results of our literature review, we recommend that when promoting physical activity in the oldest old, special attention is paid to the health benefits of physical activity, to the subject’s fears, individual preferences and social support, and to constraints related to the physical environment. However, no studies were found exclusively describing people aged 80 years and over, and future research is necessary to differentiate the barriers or motivators that are specific for the oldest old from those of younger elderly. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Adults, Aged, Attention, Barrier, Barriers, Behavior, Elderly, Environment, Exercise Program, Health Benefits, Hip Fracture, Knowledge, Literature, Literature Review, Mandatory, Motivational Factors, Motivator, Oldest Old, Participation, Perceived Barriers, Perceptions, Physical Activity, Preferences, Research, Review, Science, Social, Social Support, Systematic, Systematic Review, Web of Science, Women

# Title: Aggressive Behavior

Full Journal Title: [Aggressive Behavior](http://weblinks1.epnet.com/authHjafDetail.asp?tb=1&_ua=bo+B%5F+db+aphjnh+bt+TD++%22AGG%22+3603&_ug=sid+FF85BA4F%2D05E5%2D44C5%2D91D8%2D468659B65318%40sessionmgr2+dbs+aph+20C3&_us=hd+False+sm+ES+1C03&_uso=st%5B0+%2DTD++%22AGG%22+tg%5B0+%2D+db%5B0+%2Daph+op%25)

ISO Abbreviated Title: Aggressive Behav.

JCR Abbreviated Title: Aggressive Behav

ISSN: 0096-140X

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Wiley-Liss

Publisher Address: Div John Wiley & Sons Inc, 605 Third Ave, New York, NY 10158-0012

Subject Categories:

Behavioral Sciences: Impact Factor

? Scholtens, J. and Vandepoll, N.E. (1985), Effects of agonistic experiences of the S3 (Tryon Maze Dull) rat. *Aggressive Behavior*, **11** (2), 188-189.

Full Text: [1985\Agg Beh11, 188.pdf](1985/Agg%20Beh11,%20188.pdf)

? Scholtens, J. and Vandepoll, N.E. (1987), Behavioral consequences of agonistic experiences in the male-S3 (Tryon Maze Dull) rat. *Aggressive Behavior*, **13** (4), 213-226.

Full Text: [1987\Agg Beh13, 213.pdf](1987/Agg%20Beh13,%20213.pdf)

? Scholtens, J., Vanhaaren, F. and Vandepoll, N.E. (1988), Effects of losing and testosterone upon subsequent behavior in male and female S3 (Tryon Maze Dull) rats. *Aggressive Behavior*, **14** (5), 371-387.

Full Text: [1988\Agg Beh11, 188.pdf](1988/Agg%20Beh11,%20188.pdf)

# Title: Aging Clinical and Experimental Research

Full Journal Title: Aging Clinical and Experimental Research

ISO Abbreviated Title: Aging Clin. Exp. Res.

JCR Abbreviated Title: Aging Clin Exp Res

ISSN: 1594-0667

Issues/Year: 4

Journal Country/Territory: Italy

Language: English

Publisher: Editrice Kurtis S R L

Publisher Address: Via Luigi Zoja 30, 20153 Milan, Italy

Subject Categories:

Geriatrics & Gerontology: Impact Factor

Mussi, C., Palazzi, C., Pasqualini, R. and Salvioli, G. (2002), Impact Factor of medical journals: Problems in geriatrics. *Aging Clinical and Experimental Research*, **14** (1), 64-68.

Abstract: The Impact Factor (IF) is one of the most reliable methods for evaluating the quality of scientific journals. To date, no one has studied the IF of geriatric journals over time. Our aims were 1) to evaluate the IF trend of geriatric journals in general, and with respect to internal medicine, which is the nearest discipline, and 2) to assess the proportion of papers on common geriatric topics published in geriatric journals, with respect to other general periodicals. The current literature was studied to define what IF is and describe its good points and deficiencies. We then analyzed the situation regarding geriatric journals. A bibliometric analysis addressed the kind of journal interested in important geriatric themes (syncope, falls, hip fractures, delirium). Geriatric journals have a low IF, but their importance has been growing over the years. Despite this, papers regarding geriatric themes are published mainly in non-specific journals, and the number of publications regarding syncope, falls, hip fractures, and delirium has not increased during the period in question. In conclusion, it is difficult to use the IF for comparisons between different disciplines, in particular when the one under consideration (geriatrics and gerontology) is spread over a wide range of medical fields. The increase in IF of geriatric journals over time is the most important result of our analysis; this finding will encourage geriatric scientists to submit their papers to geriatric periodicals and will increase the specificity of the gerontological discipline.

Keywords: Bibliometric, Bibliometric Analysis, Gerontological and Geriatrics Journals, Impact Factor, Journal Citation, Journal Evaluation, Journals, Literature, Medical, Medical Journals, Papers, Periodicals, Publications, Quality, Scientific Journals

# Title: Agrekon

Full Journal Title: Agrekon

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kirsten, J.F. (2011), Agricultural economics scholarship in South Africa at the crossroads: Is it time for a national institute of food, agricultural and resource economics? *Agrekon*, **50** (3), 124-144.

Full Text: [2011\Agrekon50, 124.pdf](2011/Agrekon50,%20124.pdf)

Abstract: This paper reflects on the standing and impact of the work of agricultural economists in South Africa to illustrate the critical decisions faced by the profession as it contemplates its future. The focus is on the agricultural economic scholarship per se and not on the policy and practice issues of the discipline. Following the review of agricultural economic research output in South Africa the paper then also raises questions about relevance and impact of the discipline and the quality of training. Given these concerns the paper makes the case for improved coordination and perhaps consolidation of the discipline and presents a proposal for the establishment of a national institute that will consolidate and improve training at the various universities as well as adequately fund and direct research.

Keywords: Africa, Agricultural Economics Scholarship, Bibliometric Analysis, Economics, Impact, Policy, Practice, Research, Research Output, Review, Scholarship, South Africa, Time, Training

# Title: Agricultural Administration and Extension

Full Journal Title: Agricultural Administration and Extension

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bennell, P. and Thorpe, P. (1987), Crop science research in sub-Saharan Africa: A bibliometric overview. *Agricultural Administration and Extension*, **25** (2), 99-123.

Full Text: [1987\Agr Adm Ext25, 99.pdf](1987/Agr%20Adm%20Ext25,%2099.pdf)

Keywords: Bibliometric, Research, Science

# Title: Agricultural and Biological Chemistry

Full Journal Title: [Agricultural and Biological Chemistry](http://www.journalarchive.jst.go.jp/english/jnltop_en.php?cdjournal=bbb1961)

ISO Abbreviated Title: Agric. Biol. Chem.

JCR Abbreviated Title:

ISSN: 0002-1369

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Kato, K. and Matsuda, K. (1969), Studies on chemical structure of konjac mannan. Part I. Isolation and characterization of oligosaccharides from partial acid hydrolyzate of mannan. *Agricultural and Biological Chemistry*, **33** (10), 1446-1453.

Full Text: [1960-80\Agr Bio Che33, 1446.pdf](1960-80/Agr%20Bio%20Che33,%201446.pdf)

Abstract: The electrophoretically homogeneous glucomannan isolated from konjac flour was composed of D-glucose and D-mannose residues in the approximate ratio of 1:1.6. Controlled acid hydrolysis gave 4-O-β-D-mannopyranosyl-D-mannose, 4-O-β-D-mannopyranosyl-D-glucose, 4-O-β-D-glucopyranosyl-D-glucose (cellobiose), 4-O-β-D-glucopyranosyl-D-mannose (epicellobiose), O-β-D-mannopyranosyl-(1→4)-O-β-D-mannopyranosyl-(1→4)-D-mannose, O-β-D-glucopyranosyl-(1→4)-O-β-D-mannopyranosyl-(1→4)-D-mannose, O-β-D-mannopyranosyl-(1→4)-O-β-D-glucopyranosyl-(1→4)-D-mannose and O-β-D-glucopyranosyl-(1→4)-O-β-D-glucopyranosyl-(1→4)-D-mannose.

? Ohmomo, S., Miyazaki, K., Ohashi, T. and Abe, M. (1977), On the mechanism for the formation of indole alkaloids in *Penicillium concavo-rugulosum*. *Agricultural and Biological Chemistry*, **41** (9), 1707-1710.

Full Text: [1960-80\Agr Bio Che41, 1707.pdf](1960-80/Agr%20Bio%20Che41,%201707.pdf)

Abstract: Experiments on the biosynthesis and microbiological conversion of indole alkaloids in Penicillium concavo-rugulosum were carried out with the growing and resting mycelia, respectively, of a selected strain of the same mold. The former experiments were performed by the use of DL-tryptophan-3-14C or DL-mevalonic acid-2-14C-lactone as a precursor, while the latter experiments by the use of rugulovasine A-3H, dihydrorugulovasine A-3H, 4-[γ, γ-dimethylallyl]-tryptophan-3H, chanoclavine-[I]-3H or the other tritilated ergoline alkaloids. The results of these experiments suggested that in the Penicillium mold employed there exist the following biosynthetic route: tryptophan+mevalonic acid→4-[γ, γ-dimethylallyl]-tryptophan→rugulovasine A→dihydrorugulovasine A→dihydrorugulovasine A-lactam.

? Adachi, S., Kawamura, Y., Nakanishi, K., Matsuno, R. and Kamikubo, T. (1978), Kinetics of glucoamylase immobilized by ionic linkage and analysis of its adsorption and desorption processes. *Agricultural and Biological Chemistry*, **42** (9), 1707-1714.

Full Text: [1960-80\Agr Bio Che42, 1707.pdf](1960-80/Agr%20Bio%20Che42,%201707.pdf)

Abstract: Glucoamylase (from Rhizopus niveus) was immobilized to SP-Sephadex C-25 and C-50 by ionic linkage. The kinetic and physical properties of the immobilized glucoamylase were quantitatively investigated using maltose as substrate. The change of kinetic parameters, k0, and Km, due to immobilization was explained in terms of decrease of pH in the ion exchanger, which was estimated from Donnan’s equilibrium. Binding equilibrium between the enzyme and the ion exchanger was investigated. A linear relationship between the concentrations of enzymes in the ion exchanger and in the outer solution phase was observed over a wide range of enzyme concentrations. Distribution coefficients were obtained, by which the amount of the enzyme immobilized can be calculated. Diffusion coefficients of the enzyme in the ion exchanges were also estimated from analysis of the adsorption process. A theoreti-cal equation to predict the half-life of the activity of immobilized enzymes caused by desorption of the enzymes was proposed in terms of the distribution coefficient, the diffusion coefficient and the operational variables of a continuous reaction.

? Maeda, M., Shimahara, H. and Sugiyama, N. (1980), Detailed examination of the branched structure of konjac glucomannan. *Agricultural and Biological Chemistry*, **44** (2), 245-252.

Full Text: [1960-80\Agr Bio Che44, 245.pdf](1960-80/Agr%20Bio%20Che44,%20245.pdf)

Abstract: 1979 Konjac glucomannan, a reserve polysaccharide from *Amorphophallus koniac* tubers was isolated in a homogeneous state and is known to contain D-mannose and D-glucose in a molar ratio of 1.6:1. Survival of some monosaccharides after the periodata oxidation and subsequent reduction of knojac glucomannan suggested that it was composed mainly of β-1,4 linkages, however, there was some branching in the polysaccharide. By analysis of the hydrolyzate of the permethylated sample by GC-MS, the branching structure through C3 of both D-mannose and D-glucose residues was confirmed. Yields of O-methyl mugars were also determined. The results indicate a branched structure for a native and non-denatured specimen of konjac glucomannan.

# Title: Agricultural Sciences and Technology

Full Journal Title: Agricultural Sciences and Technology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1029-4791

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mahabadi, A.A., Hajabbasi, M.A. and Khademi, H. (2006), Removal of Pb2+, Zn2+, Cu2+ and Cd2+ from aqueous solution using two species Iranian natural zeolite. *Agricultural Wastes*, **20** (4), Pe3-Pe11.

Abstract: Application of natural substances like zeolite for decontaminating aqueous solution is a fast, inexpensive and clean method to remove heavy metal contaminants from waste water. This study was conducted to determine the rate and amount of adsorption of heavy metals by zeolite from aqueous solution and also to compare the adsorption capacity of the zeolites. Three zeolite treatments, including raw zeolite, acid washed zeolite (HCl, 1N) and base washed zeolite (NaOH, 1N) of Firouzkooh and Semnan mines in Iran in two size fractions 0.1-0.5 and 0.5-1.0 mm were used. After determining zeolite properties, solutions with initial heavy metal concentration of 2 meq litre-1 of pH 5.5 were added to zeolite with the proportion of 1:100. The amount of adsorbed heavy metals in the period of 5 to 240 minutes was measured using atomic adsorption spectroscopy. The kinetics curves of sorption were also constructed for different treatments. Results showed that the maximum sorption (99.7%) occurred for lead in the untreated zeolite of Firouzkooh and Semnan and Firouzkooh zeolite of 0.1-0.5 mm treated by NaOH. The minimum sorption (20.1%) occurred for Cu with Firouzkooh zeolite of 0.5-1.0 mm treated by acid. In all treatments, maximum sorption was related to lead and minimum sorption to copper. The sorption trend of heavy metals by untreated Semnan zeolite was Pb > Cd approx equal to Zn > Cu. While zeolite of Firouzkooh demonstrated the following trend: Pb > Cd > Zn > Cu.

# Title: Agricultural Wastes

Full Journal Title: [Agricultural Wastes](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=13006&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=a01e5060a0d6bfc0600fdef9861b9b08)

ISO Abbreviated Title: Agric. Wastes

JCR Abbreviated Title: Agric Wastes

ISSN: 0141-4607

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Elsevier Sci Ltd, Oxford

Publisher Address:

Subject Categories:

: Impact Factor

Kumar, P. and Dara, S.S. (1982), Utilization of agricultural wastes for decontaminating industrial/domestic wastewaters from toxic metals. *Agricultural Wastes*, **4** (3), 213-223.

Full Text: [A\Agr Was4, 213.pdf](A/Agr%20Was4,%20213.pdf)

Abstract: Toxic heavy metal cations can be selectively removed from domestic, mining and industrial waste streams by contact with certain agricultural by-products (e.g. bagasse, bark and onion skin). The metals are sorbed on modified agricultural by-products by ion-exchange or chelation or adsorption. Both equilibrium and column experiments were carried out with solutions of heavy metals (such as Cu2+, Pb2+, Cd2+, Hg2+) to determine rate, selectivity and capacity of the agricultural substrates for heavy metal cations. The capacity of the substrates for the majority of the metal ions studied is well above 1 mequiv. g-1 of the substrate. The toxic/valuable metal ions can be recovered and the substrates can be repeatedly reused. The data indicate the potential use of these agricultural waste materials as an alternative to the expensive commercial ion-exchange resins, to remove toxic metals from contaminated water to acceptable safety limits.

Guedes de Carvalho, R.A., González Beça, C.G., Sampaio, M.N., Neves, O., Sol Pereira, M.C. and Macedo, A. (1984), Use of pine bark for preparation of activated carbon and as a soil conditioner. *Agricultural Wastes*, **9** (3), 231-238.

Full Text: [A\Agr Was9, 231.pdf](A/Agr%20Was9,%20231.pdf)

Abstract: The preparation of activated carbons from ground pine (*Pinus pinaster*) bark was studied, using pyrolysis at 600° C in a nitrogen atmosphere for 30 min, followed by activation in a carbon dioxide atmosphere, at temperatures from 800 to 1100°C, for 10 to 40 min.

It was shown that the carbons activated at 1000 and 1100°C had excellent adsorption properties.

Pine bark pyrolysed in the same way, and in an open pile along with untreated bark, was also compared with peat, on the basis of water-holding capacity and pore size, for its suitability as a soil conditioner.

# Title: Agricultural Water Management

Full Journal Title: Agricultural Water Management

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Watanabe, H., Nguyen, M.H.T., Souphasay, K., Vu, S.H., Phong, T.K., Tournebize, J. and Ishihara, S. (2007), Effect of water management practice on pesticide behavior in paddy water. *Agricultural Water Management*, **88** (1-3), 132-140.

Full Text: [2007\Agr Wat Man88, 132.pdf](2007/Agr%20Wat%20Man88,%20132.pdf)

Abstract: The fate and transport of three herbicides commonly used in rice production in Japan were compared using two water management practices. The herbicides were simetryn, thiobencarb and mefenacet. The first management practice was an intermittent irrigation scheme using an automatic irrigation system (AI) with a high drainage gate and the second one was a continuous irrigation and overflow drainage scheme (CI) in experimental paddy fields. Dissipation of the herbicides appeared to follow first order kinetics with the half-lives (DT50) of 1.6–3.4 days and the DT90 (90% dissipation) of 7.4–9.8 days. The AI scheme had little drainage even during large rainfall events thus resulting in losses of less than 4% of each applied herbicide through runoff. Meanwhile the CI scheme resulted in losses of about 37%, 12% and 35% of the applied masses of simetryn, thiobencarb and mefenacet, respectively.

The intermittent irrigation scheme using an automatic irrigation system with a high drainage gate saved irrigation water and prevented herbicide runoff whereas the continuous irrigation and overflow scheme resulted in significant losses of water as well as the herbicides. Maintaining the excess water storage is important for preventing paddy water runoff during significant rainfall events. The organic carbon partition coefficient *K*oc seems to be a strong indicator of the aquatic fate of the herbicide as compared to the water solubility (*S*W). However, further investigations are required to understand the relation between *K*oc and the agricultural practices upon the pesticide fate and transport. An extension of the water holding period up to 10 days after herbicide application based on the DT90 from the currently specified period of 3–4 days in Japan is recommended to be a good agricultural practice for controlling the herbicide runoff from paddy fields. Also, the best water management practice, which can be recommended for use during the water holding period, is the intermittent irrigation scheme using an automatic irrigation system with a high drainage gate.

Keywords: Pesticide, Paddy field, Water management

# Title: Agriculture and Human Values

Full Journal Title: A Agriculture and Human Values

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Warner, K.D., Daane, K.M., Getz, C.M., Maurano, S.P., Calderon, S. and Powers, K.A. (2011), The decline of public interest agricultural science and the dubious future of crop biological control in California. *Agriculture and Human Values*, **28** (4), 483-496.

Full Text: [2011\Agr Hum Val28, 483.pdf](2011/Agr%20Hum%20Val28,%20483.pdf)

Abstract: Drawing from a four-year study of US science institutions that support biological control of arthropods, this article examines the decline in biological control institutional capacity in California within the context of both declining public interest science and declining agricultural research activism. After explaining how debates over the public interest character of biological control science have shaped institutions in California, we use scientometric methods to assess the present status and trends in biological control programs within both the University of California Land Grant System and the California Department of Food and Agriculture. We present available data on the number of scientific positions and the types of positions to discuss the impact on the amount of public interest research on biological control in California. We use sociograms to depict how biological control science networks have been reconfigured over time. Our quantitative and qualitative analyses indicate that the following factors contributed to the decline of biological control science in California over the 45-year period analyzed: (1) the institutional reconfiguration of university research priorities; (2) the fraying networks within and increasing specialization of biological control science; (3) the transformation of the social organization of the life science work, including privatization; and (4) the abandonment of this thematic area by civil society activist groups. This broad array of forces suggests that biological control, as a public interest science, will require a deliberate intervention, based on advocacy of clear public interest criteria.

Keywords: Advocacy, Agricultural Science, Agriculture, Biological Control, Biotechnology, Capacity, Control, Ever, Hightower, Impact, Insects, Institutional Capacity, Integrated Pest-Management, Interest, Intervention, Molecular Age, Pest Control, Politics, Priorities, Public Interest Science, Qualitative, Quantitative, Research, Research Activism, Science, Social, Social Networks, Trends, University, University-Industry Relationships, US

# Title: Agro Food Industry Hi-Tech

Full Journal Title: Agro Food Industry Hi-Tech

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bartlett, H. and Eperjesi, F. (2004), Carotenoids and ocular disease: A review. *Agro Food Industry Hi-Tech*, **15** (6), 19-21.

Full Text: 2004\Agr Foo Ind Hi-Tec15, 19.pdf

Abstract: Background Carotenoids are not considered to be essential nutrients, but their antioxidant and photoprotective properties have prompted interest in their potential role in disease prevention. Our aim is to review the evidence In relation to ocular disease. Method Web of Science and Medline via PubMed database search. Results Lutein and zeaxanthin intake has been associated with a 22% reduced risk of cataract extraction in women (RR 0.78, p = 0.04), and a 19% lower risk of cataract in men (RR 0.8, p = 0, 03). A randomised controlled trial (RCT) found a significant improvement in visual acuity in cataract patients supplemented with lutein. Two RCTs investigating the effect of P-carotene, in combination with other nutrients, on cataract report conflicting results. Several studies show no inverse association between cataract and P-carotene. Lutein and zeaxanthin are the only carotenoids found in the human macula. RCTs have found beneficial effects of both lutein and beta-carotene supplementation, in combination with other antioxidants, on visual function age-related macular disease affected subjects. Evidence for a role of lutein in preventing deterioration of visual function in retinitis pigmentosa patients is conflicting. CONCLUSIONS Further research into the role of lutein and zeaxanthin in prevention of onset and progression of ocular disease is warranted.

Keywords: Age-Related Maculopathy, Beta-Carotene, Carotenoids, Cataract-Extraction, Disease, Disease Prevention, Human, Interest, Lung-Cancer, Lutein Supplementation, Macular Pigment Density, Nuclear Cataract, Prevention, Protective Role, Pubmed, Randomised Controlled Trial, Research, Resonance Raman Measurement, Retinitis-Pigmentosa, Review, Risk, Science, Web of Science, Women

# Title: Agrochimica

Full Journal Title: Agrochimica

ISO Abbreviated Title: Agrochimica

JCR Abbreviated Title: Agrochimica

ISSN: 0002-1857

Issues/Year: 4

Journal Country/Territory: Italy

Language: Multi-Language

Publisher: IST Chimica Agraria

Publisher Address: Univ Pisa Via S Michele Degli Scalzi, 2 Pisa 56100, Italy

Subject Categories:

Chemistry, Applied: Impact Factor 0.205, 43/55 (2000)

Agriculture, Soil Science: Impact Factor 0.205, 26/29 (2000)

? Ceppi, S.B., Velasco, M.I. and Depauli, C.P. (1993), Influence of Na+ and Ca+2 in humic-acid adsorption on soil particles under different management conditions. *Agrochimica*, **37** (1-2), 134-146.

Abstract: The samples were taken from a typical Ustifluvente soil, under two systems of management, and located in the west arid zone of the province of Cordoba, Argentina. The influence of cations such as Na+ and Ca2+ in the adsorption of humic acids (HA) on soil particles at the field pH condition was studied. The presence of Ca2+ in the samples studied favored a great adsorption than Na+. The adsorption precess of HA on soil particles is mainly due to electrostatic-type interactions.

Keywords: Aggregate Stability, Desorption, Fluoride, Mechanistic Model, pH, Phosphate, Sorption, Zinc Retention

? Ahumada, I.T. and Schalscha, E.B. (1995), Effect of phosphate sorption on cadmium and copper sorption in soils. *Agrochimica*, **39** (2-3), 101-110.

Abstract: The sorption characteristics of cadmium and copper and the effect that previously sorbed phosphate has on this sorption was studied in two soils, one of them irregated exclusively with untreated domestic and industrial sewage water.

Using the Langmuir isotherm equation it was found that only in one instance did the Cd sorption yield a straight line while the Cu sorption did so in the case of the A and B horizons of the control soil. This indicates that the adsorption sites in this instance are of the same type. The maximum adsorption values found were of 75 mmol/kg for Cd and 111 and 122 mmol/kg for Cu. In the other instances a convex curve was obtained and the two surface Langmuir equation was applicable, indicating that the sorption takes place on two surfaces with different binding energies.

Sorbing phosphates previous to a Cd or Cu sorption resulted in only a slight change in the sorption of the metals. A variance analysis showed that there were significant differences at the 5% level and these were evaluated using the Duncan test.

Keywords: Adsorption Phenomena, Fertilization, Kinetics, Langmuir Equation, Phosphorus, Sorption, Zinc

? Moral, R., Gomez, I., Pedreno, J.N. and Mataix, J. (1996), Cadmium adsorption in different substrata: Influence exerted by Ca. *Agrochimica*, **40** (4), 191-196.

Abstract: A series of interaction experiments were carried but between different substrata (soils and sewage sludge) with the aim of assessing Cd retention in these substrata. We also studied the effect that the presence of Ca can have in Cd retention process.The data obtained were adjusted to different adsorption isotherms (Langmuir’s, Brunauer’s and Freundlich’s), which led to different characteristic parameters. Langmuir’s isotherm is the one that best describes the data obtained, with Freundlich’s model for the acid soil used. Increasing ionic strength with Ca seems to promote a decrease in Cd adsorption.

Keywords: Sorption, Soils

# Title: AI Communications

Full Journal Title: AI Communications

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? van den Besselaar, P. and Leydesdorff, L. (1993), Research performance in artificial intelligence and robotics: An international comparison. *AI Communications*, **6** (2), 83-91.

Full Text: 193\AI Com6, 83.pdf

Abstract: The authors give a brief overview of the AI and robotics research performance of several countries in the 1980s, but focus on the EC and some of its main competitors: the US, Canada, Japan and Sweden. Shares in research output are changing and the patterns differ between AI and robotics. First, they specify what counts as AI research output and robotics-research output. Although research has various types of output, the authors focus on research output in terms of publications in scientific journals. By making this selection, they neglect other types of output like patents, artifacts, books and congress papers. The empirical base are the journals as included in the Science Citation Index and the Social Sciences Citation Index. They use the results of searching these databases to review the research.

Keywords: Canada, Comparison, Databases, EC, International, International Comparison, Japan, Journals, Neglect, Papers, Patents, Performance, Publications, Research, Research Performance, Review, Science Citation Index, Scientific Journals, Sweden, US

# Title: AIChE Journal

Full Journal Title: [AIChE Journal](http://www3.interscience.wiley.com/journal/107061889/toc)

ISO Abbreviated Title: AIChE J.

JCR Abbreviated Title: AIChE J

ISSN: 0001-1541

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Inst Chemical Engineers

Publisher Address: 345 E 47th St, New York, NY 10017

Subject Categories:

Engineering, Chemical: Impact Factor 1.537, 5/110 (1999); Impact Factor 1.645, 6/117 (2000); Impact Factor 1.793, 8/123 (2001); Impact Factor 1.626, 9/126 (2002)

Notes: highly cited

? Wilke, C.R. and Chang, P. (1955), Correlation of diffusion coefficients in dilute solutions. *AIChE Journal*, **1** (2), 264-270.

Full Text: [-1959\AIChE J1, 264.pdf](-1959/AIChE%20J1,%20264.pdf)

Keywords: Correlation

Tien, C. and Thodos, G. (1959), Ion exchange kinetics for systems of nonlinear equilibrium relationships. *AIChE Journal*, **5** (3), 373-378.

Full Text: [-1959\AIChE J5, 373.pdf](-1959/AIChE%20J5,%20373.pdf)

Abstract: Mathematical relationships based on material balance and rate equations have been derived for the study of ion exchange kinetics in a hed-bed operation. Numerical techniques for the solution of the systems possessing equilibrium relationships of the Freundlichadsorption isotherm type have been developed, and numerical results have been obtained with the use of a digital computer. The resulting numerical solutions have been found to be dependent on parameters involving time, position, and the relative resistances of the liquid and resin phases. The numerical solutions are presented in both tabular and graphical forms.

? Chiang, S.H. and Toor, H.L. (1960), Mass transfer with interfacial adsorption methyl chloride into water. *AIChE Journal*, **6** (4), 539-542.

Full Text: [-1959\AIChE J6, 539.pdf](-1959/AIChE%20J6,%20539.pdf)

Abstract: The rate of transfer of a surface-active solute across an interface may be either greater or less than the rate which would be obtained if the interface had no abnormal properties. Studies of the absorption of methyl chloride, a surface-active gas, by a laminar water jet show that for contact times of 1 msec. or greater the absorption rate is the same as would be predicted for a system with no abnormal interfacial properties. This is in accord with theory which indicates that an abnormally high rate caused by a positive surface excess could only be observed for contact times considerably shorter than those used here.

? Rounsley, R.R. (1961), Multimolecular adsorption equation. *AIChE Journal*, **7** (2), 308-311.

Full Text: [1960-80\AIChE J7, 308.pdf](1960-80/AIChE%20J7,%20308.pdf)

Abstract: An equation is derived for the multimolecular adsorption isotherm in the range where capillary adsorption is insignificant. The equation is demonstrated to apply quantitatively to the entire range of relative vapor pressures. It is shown that this equation reduces to the equation of Brunauer, Emmett, and Teller at lower relative vapor pressures.

Application of this equation to data in the literature showed good agreement. The standard deviation of the data from the equation was in the same order of magnitude as the scatter of the data themselves. Although the application of this equation was largely to water vapor adsorption systems, several applications to other systems correlated equally well.

? Tien, C. (1961), Adsorption kinetics of a nonflow system with nonlinear equilibrium relationship. *AIChE Journal*, **7** (3), 410-412.

Full Text: [1960-80\AIChE J7, 410.pdf](1960-80/AIChE%20J7,%20410.pdf)

Abstract: The kinetics of adsorption in a nonflow system with nonlinear equilibrium relationship and negligible liquid-phase resistance has been studied, and the numerical solutions corresponding to different initial conditions are presented. The concentration ratio is found to be a function of two dimensionless groups. Considerotion is also given to the problem of convergence in connection with the numerical calculation.

? Kabel, R.L. and Johanson, L.N. (1962), Reaction kinetics and adsorption equilibria in the vapor-phase dehydration of ethanol. *AIChE Journal*, **8** (5), 621-628.

Full Text: [1960-80\AIChE J8, 621.pdf](1960-80/AIChE%20J8,%20621.pdf)

Abstract: This work is an experimental assessment of the Langmuir-Hinshelwood model of heterogeneous catalysis. The vopor-phase dehydration of ethanol to diethyl ether, as catalyzed by cation exchange resin in the acid form, was the reaction chosen for study.

Initial reaction rate data, determined from the integral kinetic data obtained experimentally, allowed selection of the most suitable rate equation from among several plausible equations derived in accordance with the above model. The Langmuir equilibrium adsorption constants in the rate equation were compared with the corresponding constants determined directly from pure component studies in a static adsorption system. The adsorption constants determined for the three reacting components by these independent methods showed definite order-of-magnitude agreement. The adsorption studies also provided significant information about the nature of the catalytic site.

The extent of agreement in the constants determined by these two independent approaches is considered to be evidence of the theoreticol validity of this model. Additional interpretation of the adsorption and kinetic data via this model suggests that the ethanol dehydration reaction proceeds through the reaction of adjacently adsorbed ethanol molecules

Masamune, S. and Smith, J.M. (1964), Adsorption rate studies-significance of pore diffusion. *AIChE Journal*, **10**, 246-252.

Full Text: [1960-80\AIChE J10, 246.pdf](1960-80/AIChE%20J10,%20246.pdf)

Abstract: Adsorption rates were measured by a transcient method for nitrogen on beds of porous Vycor glass particles. Nitrogen was adsorbed, from a low concentration in helium, at liquid nitrogen temperature.

Equations are presented for the concentration as a function of time and position in the bed, based upon surface adsorption, pore diffusion, or external diffusion controlling the overall process. Analysis of the data with these results indicates that the surface adsorption is a very rapid process and that pore processes determine the rate for particles larger than 0.01 cm. in radius. The effective pore diffusivity was determined to be 0.04 sq. cm./sec. The predominant contribution to the diffusivity is a surface mechanism rather than diffusion in the gas within the pores.

Masamune, S. and Smith, J.M. (1965), Adsorption rate studies-interaction of pore diffusion and surface processes. *AIChE Journal*, **11** (1), 34-40.

Full Text: [1960-80\AIChE J11, 34.pdf](1960-80/AIChE%20J11,%2034.pdf)

Notes: highly cited, IIsotherm

Myers, A.L. and Prausnitz, J.M. (1965), Thermodynamics of mixed-gas adsorption. *AIChE Journal*, **11** (1), 121-127.

Full Text: [1960-80\AIChE J11, 121.pdf](1960-80/AIChE%20J11,%20121.pdf)

Abstract: A simple technique is described for calculating the adsorption equilibria for components in a gaseous mixture, using only data for the pure-component adsorption equilibria at the same temperature and on the same adsorbent. The proposed technique is based on the concept of an ideal adsorbed solution and, using classical surface thermodynamics, an expression analogous to Raoult’s law is obtained. The essential idea of the calculation lies in the recognition that in an ideal solution the partial pressure of an adsorbed component is given by the product of its mole fraction in the adsorbed phase and the pressure which it would exert as a pure adsorbed Component at the same temperature and spreading pressure as those of the mixture. Predicted isotherms give excellent agreement with experimental data for methaneethane and ethylene-carbon dioxide on activated carbon and for carbon monoxide-oxygen and propane-propylene on silica gel. The simDlicitv of the calculation, which requires no data for the mixture, makes it espec’ially useful for engineering applications.

? Tien, C. and Thodos, G. (1965), Adsorption kinetics in fixed beds with nonlinear equilibrium relationships. *AIChE Journal*, **11** (5), 845-847.

Full Text: [1960-80\AIChE J11, 845.pdf](1960-80/AIChE%20J11,%20845.pdf)

Abstract: Previous work by the authors on ion exchange kinetics for systems having nonlinear equilibrium relationships has been extended. Computer studies have produced additional concentration-bed length-time relationships for values of α0 = 5, 10, and 50. This information and the results obtained previously for values of α0 = 100 and 1,000 provide an extensive variation of the parometer α0 for design applications. The composite results are represented graphically.

Kidnay, A.J. and Myers, A.L. (1966), A simplified method for the prediction of multicomponent adsorption equilibria from single gas isotherms. *AIChE Journal*, **12** (5), 981-986.

Full Text: [1960-80\AIChE J12, 981.pdf](1960-80/AIChE%20J12,%20981.pdf)

Abstract: The ideal adsorbed solution theory of Myers and Prausnitz (7) provides an accurate ond thermodynamicolly consistent method for predicting multicomponent adsorption equilibria. The major difficulty in the application of this theory lies in the calculation of the spreading pressure curves for the pure adsorbates. The purpose of this article is to show that in many cases of practical interest, the spreading pressure calculations may be greatly simplified or altogether eliminated with little or no loss in the accuracy of the calculations. The problem of odsorption azeotropy is also briefly discussed.

? Rimpel, Jr., A.E., Camp, D.T., Kostecki, J.A. and Canjar, L.N. (1968), Kinetics of physical adsorption of propane from helium on fixed beds of activated alumina. *AIChE Journal*, **14** (1), 19-24.

Full Text: [1960-80\AIChE J14, 19.pdf](1960-80/AIChE%20J14,%2019.pdf)

Abstract: The kinetics of physical adsorption of propane from helium on fixed beds of activated alumina at 30°C. and at atmospheric pressure was studied. Two grades of activated alumina with the same average pore size distribution but different pore size distributions were used. Gas concentration, flow rate, and adsorbent particle size were also varied. The rate of internal diffusion controlled the adsorption process and was best described by Ficks’ equation for unsteady state diffusion into a sphere. The internal diffusion appeared to be by a pore diffusion rather than by a surface diffusion mechanism.

Notes: highly cited

? Renon, H. and Prausnitz, J.M. (1968), Local compositions in thermodynamic excess functions for liquid mixtures. *AIChE Journal*, **14** (1), 135-144.

Full Text: [1960-80\AIChE J14, 135.pdf](1960-80/AIChE%20J14,%20135.pdf)

Abstract: A critical discussion is given of the use of local compositions for representation of excess Gibbs energies of liquid mixtures. A new equation is derived, based on Scott’s two-liquid model and on an assumption of nonrandomness similar to that used by Wilson. For the same activity coefficients at infinite dilution, the Gibbs energy of mixing is calculated with the new equation as well as the equations of van Laar, Wilson, and Heil; these four equations give similar results for mixtures of moderate nonideality but they differ appreciably for strongly nonideal systems, especially for those with limited miscibility. The new equation contains a nonrandomness parameter 12 which makes it applicable to a large variety of mixtures. By proper selection of 12, the new equation gives an excellent representation of many types of liquid mixtures while other local composition equations appear to be limited to specific types. Consideration is given to prediction of ternary vapor-liquid and ternary liquid-liquid equilibria based on binary data alone.

Sircar, S. and Myers, A.L. (1971), A thermodynamic consistency test for adsorption from binary liquid mixtures on solids. *AIChE Journal*, **17** (1), 186-190.

Full Text: [1960-80\AIChE J17, 186.pdf](1960-80/AIChE%20J17,%20186.pdf)

Abstract: A thermodynamic consistency test for adsorption from binary liquid mixtures is derived using the Gibbs equotion for adsorption. Adsorption dato for the liquid mixture pairs A-5, AX, and B-C on the same adsorbent must be thermodynamically consistent. The consistency test is applied to experimental data for adsorption from the binary liquid mixtures benzene-cyclohexane, benzene-n-heptane ond cyc lohexane-n-heptone on silica gel ot 30°C.

? England, D.C. and Berg, J.C. (1971). Transfer of surface-active agents across a liquid-liquid interface. *AIChE Journal*, **17** (2), 313-322.

Full Text: [1960-80\AIChE J17, 313.pdf](1960-80/AIChE%20J17,%20313.pdf)

Abstract: Analytical solutions are obtained for the transfer of an adsorbing solute across a liquidliquid interface taking into account the effects of molecular diffusion in both bulk phases, adsorptive accumulation at the interface, and energy barriers to adsorption and/or desorption. These solutions show that while adsorptive accumulation alone affects the transfer rate but little, the presence of an adsorption or desorption barrier can significantly affect the bulk concentration profiles and decrease the mass transfer rate. The presence of a desorption barrier is shown to cause the dynamic interfacial tension to pass through a minimum below the steady state value. For some systems it is conceivable that the interfacial tension minimum would be sufficiently low that a slight agitation would result in spontaneous emulsification. Dynamic interfacial tension data for oil-water systems with interface ages from 0.05 to 1.5 sec. are obtained using a laminar contracting liquid jet. The data indicate the presence of a small net desorption barrier to the transfer of normal and isobutyric acids from oil to water and large barriers to both the adsorption and desorption of 1,5 pentanediol.

? Suzuki, M. and Smith, J.M. (1972), Dynamics of diffusion and adsorption in a single catalyst pellet. *AIChE Journal*, **18** (2), 326-332.

Full Text: [1960-80\AIChE J18, 326.pdf](1960-80/AIChE%20J18,%20326.pdf)

Abstract: Exposing one face of a catalyst pellet to a pulse of tracer gas and analyzing the response at the opposite end provides a dynamic method for measuring the effective diffusivity of porous catalysts. The first and second moments of the response peak ore shown to be a function of only De and the geometry of the pellet and detector chamber for a nonadsorbing, tracer-carrier system. Data obtained for alumina pellets of different densities illustrate the method. For an adsorbing tracer, the first moment is a function of both De and the adsorption equilibrium constant. Measurements for an unconsolidated assembly of nickel/Kieselguhr particles, using the Dz-Hz system, show that first-moment data are sufficient to calculate reasonably accurate values of the equilibrium adsorption. However, it appears to be difficult to obtain adsorption rate constants by this method.

Radke, C.J. and Prausnitz, J.M. (1972), Thermodynamics of muliti-solute adsorption from dilute liquid solutions. *AIChE Journal*, **18** (4), 761-768.

Full Text: [1960-80\AIChE J18, 761A.pdf](1960-80/AIChE%20J18,%20761A.pdf); [A\AIChE J18, 761.pdf](A/AIChE%20J18,%20761.pdf)

Abstract: The thermodynamics of ideal dilute solutions is applied toward establishing a method for predicting multi-solute adsorption using only data for single-solute adsorption from dilute liquid solution. The method is similar to that proposed by Myers and Prausnitz for adsorption of gas mixtures.

Experimental adsorption data for activated carbon at 25°C are reported for dilute aqueous solutions containing acetone and propionitrile, and p-chlorophenol and p-cresol. Culculated and experimental results are in excellent agreement for the first system and in fair agreement for the second system. It appears that the ideal dilute-solution theory for predicting multisolute adsorption is most reliable for those systems where solute adsorption loading is moderate. When solute adsorption loading is large, the simplifying assumptions in the theory must be relaxed to allow for solute-solute interactions on the surface. The method presented here is simple to use and provides good approximations for engineering design.

Zwiebel, I., Gariepy, R.L. and Schnitzer, J.J. (1972), Fixed bed desorption behavior of gases with non-linear equilibria: Part I. Dilute, one component, isothermal systems. *AIChE Journal*, **18** (6), 1139-1147.

Full Text: [1960-80\AIChE J18, 1139.pdf](1960-80/AIChE%20J18,%201139.pdf)

Abstract: Generalized depletion curves for desorption (and breakthrough curves for adsorption) were calculated for a system characterized by the Langmuirtype equilibria and controlled by a film type rate model. The depletion points generally appear sooner than the corresponding breakthrough points, and the desorption profiles are significantly broader than the corresponding adsorption curves. These phenomena may be best explained in terms of the prevailing driving forces. -The effects of adsorbate properties and operating variables (inlet composition and flow rate) were established and experimentally substantiated.

Furusawa, T. and Simth, J.M. (1973), Diffusivities from dynamic adsorption data. *AIChE Journal*, **19** (2), 401-403.

Full Text: [1960-80\AIChE J19, 401.pdf](1960-80/AIChE%20J19,%20401.pdf)

? Terei, T. and Lancaste, B.W. (1973), Adsorption of hydrogen-fluoride on alumina. *AIChE Journal*, **19** (2), 387-389.

Full Text: [1960-80\AIChE J19, 387.pdf](1960-80/AIChE%20J19,%20387.pdf)

Minka, C. and Myers, A.L. (1973), Adsorption from ternary liquid mixtures on solids. *AIChE Journal*, **19** (3), 453-459.

Full Text: [1960-80\AIChE J19, 453.pdf](1960-80/AIChE%20J19,%20453.pdf)

Abstract: The theory of adsorption from binary liquid mixtures on solids is extended to an arbitrary number of components. An equation for the surface excess is derived in terms of the free energy of immersion of the adsorbent, the capacity of the adsorbent at saturation, and activity coefficients in the bulk and. adsorbed phases.

Experimental data are reported for adsorption from binary and ternary liquid mixtures of benzene, ethyl acetate, and cyclohexane on activated carbon at 30°C. These systems exhibit nonidealities in the adsorbed phase. The theory provides accurate estimates of adsorption from the ternary mixtureb using data for adsorption from binaries.

Furusawa, T. and Smith, J.M. (1974), Intraparticle mass transport in slurries by dynamic adsorption studies. *AIChE Journal*, **20** (1), 88-93.

Full Text: [1960-80\AIChE J20, 88.pdf](1960-80/AIChE%20J20,%2088.pdf); [A\AIChE J20, 88.pdf](A/AIChE%20J20,%2088.pdf)

Abstract: Rates were measured at 25°C for the adsorption of benzaldehyde from an aqueous solution into particles of Amberlite, or activated carbon, suspended in the solution. The data for monodisperse, Amberlite particles (mean pore radius = 50A) showed significant intraparticle diffusion resistance over the entire particle size range 200 to 900 microns (diameter). Intraparticle diffusivities were larger (tortuosity factor - 0.35) than expected from pore-volume diffusion in the liquid-filled pores.

For the activated carbon particles (of the same size) which have a bidisperse pore-volume distribution (pore diameter range 15 to 104A), the effect of intraparticle diffusion was much less important and separation of the external diffusion resistance to obtain a precise value of the intraparticle diffusivity was not possible. However, D, values are larger than for Amberlite and much greater than the molecular diffusivity of benzaldehyde in liquid-filled pores. The unusually high intraparticle diff usivity seems most likely to be due to interpreting dynamic adsorption data for a bidisperse porous particle with a theory involving but one diffusivity.

Notes: highly cited

Weber, T.W. and Chakravorti, R.K. (1974), Pore and solid diffusion models for fixed-bed adsorbers. *AIChE Journal*, **20** (2), 228-238.

Full Text: [1960-80\AIChE J20, 228.pdf](1960-80/AIChE%20J20,%20228.pdf)

Abstract: Most models for fixed bed adsorbers have used either the homogeneoussolid or pore diffusion model for the pellets. When the adsorption isotherm is linear, the two models can lead to identical breakthrough curves. The conditions for this equivalence are presented here. It is shown that one of the bulk flow factors that was included in the formulation of one pore diffusion model will be significant only for feedstreams containing a relatively high concentration of adsorbate. The porosity factor of the pore model is shown to be very important, especially as the porosity decreases. The importance of the two diffusional models with respect to the predicted breakthrough curves is demonstrated. For comparable beds, it is shown that the breakthrough curve based on the homogeneous model is delayed with respect to that based on the pore model at early times, regardless of the shape of the isotherm. Finally, the various possible solutions for an irreversible isotherm are reviewed for each of the models, and a solution is presented for the general case of a pore model with an outside film resistance.

? Hsu, S.M. and Kabel, R.L. (1974), Adsorption and kinetics in a batch heterogeneous catalytic reactor. *AIChE Journal*, **20** (4), 713-720.

Full Text: [1960-80\AIChE J20, 713.pdf](1960-80/AIChE%20J20,%20713.pdf)

Abstract: The utility of a new dynamic experimental technique is illustrated for the specific case of the vapor phase dehydration of ethanol over a hydrogen ion exchange resin. Adsorbed phase composition data are obtained simultaneously with complete vapor phase information, providing new insight into the catalytic behavior. A mathematical model, based upon Langmuir-Hinshelwood kinetics, comprises simply five first-order ordinary differential equations. The model describes all of the important transient and equilibrium characteristics of the reacting system qualitatively and most quantitatively. Experimental data alone are used to show that the surface reaction is the rate controlling step.

Zwiebel, I., Kralik, C.M. and Schnitzer, J.J. (1974), Fixed bed desorption behavior of gases with nonlinear equilibria: Part II. dilute, multicomponent, isothermal systems. *AIChE Journal*, **20** (5), 915-923.

Full Text: [1960-80\AIChE J20, 915.pdf](1960-80/AIChE%20J20,%20915.pdf)

Abstract: Generalized depletion curves for desorption (and corresponding breakthrough curves for adsorption) were calculated for systems characterized by the Langmuir-type multicomponent equilibrium equation and controlled by the film type rate model. In contrast with adsorption where the nonkey (or less strongly adsorbed) component curves display overshoots above feed concentration, in desorption the key component depletion curves exhibit the instabilities in the form of inflections and curvatures. As in the one component case, the differences in the depletion and breakthrough curves may be related to the rate phenomena. The undulations in the key component depletion curves may be characterized by derivatives of the rate data. The major significance of these instabilities is to elongate the depletion curves, which in turn requires the expenditure of added effort during regeneration. Process modifications are indicated, which could suppress the instabilities. The predicted trends were c o n k e d by experimental depletion curves.

Komiyama, H. and Smith, J.M. (1974), Surface diffusion in liquid-filled pores. *AIChE Journal*, **20** (6), 1110-1117.

Full Text: [1960-80\AIChE J20, 1110.pdf](1960-80/AIChE%20J20,%201110.pdf)

Abstract: Surface diffusivities of benzaldehyde in liquid-filled pores of Amberlite particles (polystyrene) were measured at 25°C using water as a solvent. For particles of different surface areas but chemically similar pore surfaces, the intrinsic surface diffusivity Ds’ was about the same, but the relative importance of surface to pore-volume diffusion increased with surface area.

For a single type of particle, the adsorption capacity was decreased about twenty-fold by adding up to 19 mole yo methanol to the solvent. This was accompanied by an increase in Ds’ from 1.2×10-8 to 1.2×10-7 cm2/s. These results were interpreted in terms of a two-step theory for surface migration: (1) formation of a vacant site on the adsorbent surface followed by (2) movement of the adsorbate molecule into the site by breaking the surface-adsorbate bond. The theory predicts that surface transport will be large when the surface area is high and that the D,’ will be large when the heat of adsorption is low, and when the bond between solvent molecules and the surface is weak.

In our studies the surface contribution to intraparticle transport was as much as 20 times the contribution due to pore-volume diffusion. This ratio increases as the concentration of adsorbate in the liquid decreases.

Notes: highly cited

? Abrams, D.S. and Prausnitz, J.M. (1975), Statistical thermodynamics of liquid-mixtures: New expression for excess Gibbs energy of partly or completely miscible systems. *AIChE Journal*, **21** (1), 116-128.

Full Text: [1960-80\AIChE J21, 116.pdf](1960-80/AIChE%20J21,%20116.pdf)

Abstract: The population balances describing the time dependence of the size distribution can, under some conditions, be trasformed by means of a similarity transformation into an ordinary integro-differential equation containing two instead of three variables. If there is compatibility between the transformed equation and the constraints given by the total mass conservation equation and the equation for the total number of particles, a self-preserving spectrum of the first kind can be obtaiened. There are, however, many situations such as the sintering controlled aging of supported metal catalysts, coagulation of colloidal particles in laminar shear flow, and coagulation of colloidal particles in a turbulent flow when the particles are smaller than the size of the smallest eddy for which, although a similarity transformation is possible, the transformed equation has no solution because of incompatibility with the above mentioned constraints. A second kind of self-preserving spectrum is suggested for these situations. The new variables are induced from a particular case for which an analytical result is available. A detailed presentation of the sintering controlled aging of supported metal catalysts is presented.

Keywords: Energy, Thermodynamics

Notes: highly cited

? Fredenslund, A., Jones, R.L. and Prausnitz, J.M. (1975), Group-contribution estimation of activity coefficients in nonideal liquid mixtures. *AIChE Journal*, **21** (6), 1086-1099.

Full Text: [1960-80\AIChE J21, 1086.pdf](1960-80/AIChE%20J21,%201086.pdf)

Abstract: A group-contribution method is presented for the prediction of activity coefficients in nonelectrolyte liquid mixtures. The method combines the solution-of-functional-groups concept with a model for activity coefficients based on an extension of the quasi chemical theory of liquid mixtures (UNIQUAC). The resulting UNIFAC model (UNIQUAC Functional-group Activity Coefficients) contains two adjustable parameters per pair of functional groups. By using group-interaction parameters obtained from data reduction, activity coefficients in a large number of binary and multicomponent mixtures may be predicted, often with good accuracy. This is demonstrated for mixtures containing water, hydrocarbons, alcohols, chlorides, nitriles, ketones, amines, and other organic fluids in the temperature range 275° to 400°K.

Tien, C., Hsieh, J.S.C. and Turian, R.M. (1976), Application of *h*-transformation for the solution of multicomponent adsorption in fixed bed. *AIChE Journal*, **22** (3), 498-505.

Full Text: [1960-80\AIChE J22, 498.pdf](1960-80/AIChE%20J22,%20498.pdf)

Abstract: A procedure for the application of the so-called h-transformation in solving fixed-bed multicomponent adsorption problems is developed. In order to apply this procedure, it is necessary to select an appropriate value for the transition-motion factor ξ, and the criteria for making this selection are established in this work.

Hsieh, J.S.C., Turian, R.M. and Tien, C. (1977), Multicomponent liquid phase adsorption in fixed bed. *AIChE Journal*, **23** (3), 263-275.

Full Text: [1960-80\AIChE J23, 263.pdf](1960-80/AIChE%20J23,%20263.pdf)

Abstract: Although multicomponent, liquid phase adsorption is often encountered in industrial application, most of the studies concerning fixed-bed sorption processes have been dealt primarily with systems containing one adsorbable species. The present work provides a numerical solution to the fixed-bed, multicomponent adsorption problem, taking into account both separately or in combination the effect of liquid and/or solid phase mass transfer resistance and of variation of the assumed governing adsorption isotherm. Numerical solutions of several example problems are presented and compared with results based on equilibrium theory and a simplified method developed by Cooney and co-workers previously (1972).

Klaus, R., Aiken, R.C. and Rippin, D.W.T. (1977), Simulated binary isothermal adsorption on activated carbon in periodic countercurrent column operation. *AIChE Journal*, **23** (4), 579-586.

Full Text: [1960-80\AIChE J23, 579.pdf](1960-80/AIChE%20J23,%20579.pdf)

Abstract: Simulation studies are presented of single- and two-component adsorption in periodic, countercurrent, multicolumn systems. It is demonstrated that long adsorption profiles are likely to occur in the adsorption of organic contaminants from wastewater onto activated carbon, thus favoring the use of multicolumn rather than single-column systems. For two-component adsorption in a multicolumn system, it is shown that more switching periods are needed than in the single-column case before the profiles stabilize, that the stabilized profiles can differ substantially from those found in a single-column system, and that their shape is strongly influenced by the relative concentrations of the components in the feed.

? Liaw, C.H., Wang, J.S.P., Greenkorn, R.A. and Chao, K.C. (1979), Kinetics of fixed-bed adsorption: A new solution. *AIChE Journal*, **25** (2), 376-381.

Full Text: [1960-80\AIChE J25, 376.pdf](1960-80/AIChE%20J25,%20376.pdf)

Abstract: A new solution is obtained to the kinetics of a fixed-bed adsorber in response to a step change in feed concentration for a linear equilibrium system with consideration for the resistance to mass transfer in both the mobile and stationary phases. The differential equations of continuity and mass transfer are integrated upon simulating the intraparticle concentrations with a parabola. The results agree with Rosen’s rigorous but complex solution in the range of conditions of practical interest. The present sohtion is more convenient for computer application for the calculation of breakthrough curves.

? Rodrigues, A.E. and Beira, E.C. (1979), Staged approach of percolation processes. Part 1. Sorption processes in a perfectly mixed reactor: Influence of nonlinear equilibrium isotherm and external mass transfer resistance. *AIChE Journal*, **25** (3), 416-423.

Full Text: [1960-80\AIChE J25, 416.pdf](1960-80/AIChE%20J25,%20416.pdf)

Abstract: Sorption processes in a perfectly mixed reactor are analyzed by using two models: the equilibrium model and a kinetic model which considers the effect of the external mass transfer resistance. In both cases, a general nonlinear equilibrium isotherm is considered.

The influence of the different model parameters on the response of the perfectly mixed sorber and their effect on a design parameter (the breakthrough time) are discussed.

A criterium is derived in order to predict when the equilibrium model is valid.

Suwanayuen, S. and Danner, R.P. (1980), A gas adsorption isotherm equation based on vacancy solution theory. *AIChE Journal*, **26** (1), 68-76.

Full Text: [1960-80\AIChE J26, 68.pdf](1960-80/AIChE%20J26,%2068.pdf)

Abstract: A new isotherm equation for pure gas adsorption is developed and tested. In the new method, the adsorption equilibrium is treated as an osmotic equilibrium between two “vacancy” solutions having different compositions. One solution represents the gas phase and the other the adsorbed phase. The vacancy solution is composed of adsorbates and vacancies. The latter is an imaginary entity defined as the vacuum space which acts as the solvent for the system. Thermodynamic equations governing the equilibrium of this system are used to derive the equation of state for the adsorbed phase. The non-ideality of the adsorbed solution is accounted for in terms of an activity coefficient whose composition dependence is described by the Wilson equation. The equation of state, together with the Gibbs adsorption equation, is then used in the derivation of the adsorption isotherm equation. The developed correlation has been evaluated with the adsorption isotherm data of O2, N2, and CO on zeolite 1oX at 144.3 K, 172.0 K, 227.6 K and 273.2 K, and that of CH4, C2H2, C2H4, C2H6, C3H6, C3H8, nC4H10, and CO2 on Nuxit-AL activated carbon at 293.2 K, 313.2 K, 333.2 K and 363.2 K. For both adsorbents, the correlations are better than those obtained by any other adsorption model which has been extended to gas mixtures. The parameters obtained from the pure component data can be used to predict a priori gasmixture equilibria.

Costa, E., Sotelo, J.L., Calleja, G. and Marrón, C. (1981), Adsorption of binary and ternary hydrocarbon gas mixtures on activated carbon: Experimental determination and theoretical prediction of the ternary equilibrium data. *AIChE Journal*, **27** (1), 5-12.

Full Text: [1981\AIChE J27, 5.pdf](1981/AIChE%20J27,%205.pdf)

Abstract: Experimental binary and ternary equilibrium data for the adsorption of hydrocarbon mixtures of methane, ethane, ethylene, and propylene on activated carbon at 20°C are presented and discussed. Reproduction of binary adsorption equilibria and prediction of ternary adsorption equilibria exclusively with data of binary systems have been carried out using a real adsorbed solution theory, which requires the calculation of the activity coefficients for the components in the adsorbed phase.

Predicted equilibrium data are found to be in excellent agreement with experimental values using Wilson and UNIQUAC equations to calculate the activity coefficients. The real absorbed solution theory provides a much more accurate method for predicting multicomponent adsorption equilibria than the ideal adsorbed solution theory.

Notes: highly cited

Peel, R.G., Benedek, A. and Crowe, C.M. (1981), A branched pore kinetic model for activated carbon adsorption. *AIChE Journal*, **27** (1), 26-32.

Full Text: [1981\AIChE J27, 26.pdf](1981/AIChE%20J27,%2026.pdf)

Abstract: A branched pore kinetic model for aqueous phase activated carbon adsorption is presented in which the carbon particle is separated into rapidly and slowly diffusing regions. The model was developed to overcome problems arising from a single rate parameter analysis and is shown to describe experimental data well. In addition to very different rates of transport in the two regions, parameters estimated by regression analysis indicated differences in the adsorptive characteristics.

Suzuki, M. and Fujii, T. (1982), Concentration dependence of surface diffusion coeffient of propionic acid in activated carbon particles. *AIChE Journal*, **28** (3), 380-385.

Full Text: [1982\AIChE J28, 380.pdf](1982/AIChE%20J28,%20380.pdf)

Abstract: A Wicke Kallenbach type steady state diffusion experiment was performed for varying concentrations of propionic acid solution through activated carbon pellets. Since surface diffusion is a dominant mechanism, concentration dependence of the surface diffusion coefficient is precisely determined from the change of diffusion flux with concentration. Strong dependence of surface diffusion coefficient on amount adsorbed is partially interpreted in terms of the change of heat of adsorption with surface coverage as determined from separate equilibrium runs.

? Belfort, G., Altshuler, G.L., Thallam, K.K., Feerick, C.P. and Woodfield, K.L. (1984), Selective adsorption of organic homologs onto activated carbon from dilute aqueous-solutions - solvophobic interaction approach. 4. Effect of simple structural modifications with Aliphatics. *AIChE Journal*, **30** (2), 197-207

Full Text: [1984\AIChE J30, 197.pdf](1984/AIChE%20J30,%20197.pdf)

Abstract: Preferential adsorption of organic compounds onto activated carbon from dilute aqueous solutions is studied to develop a comprehensive theoretical basis for predicting the adsorption of structurally different isomers for different homologous series. The fundamental multidimensional approach of the solvophobic *(c+)* thermodynamic theory is further refined and used to correlate the extent of adsorption for the comprehensive theory with the overall standard net free energy change (ACnet/RT) for the association-adsorption reaction in solution, and for the simplified theory with the cavity surface area of the solute *(TSA).* Experimental adsorption isotherms of two homologous series (12 aliphatic alcohols and 21 aliphatic ketones) were measured and used to test and compare the c+ theory with seven independent parameters characterizing the sorbates. Several experimental innovations for measuring equilibrium adsorption isotherms are introduced to reduce the possible loss of sorbate during the procedure and to provide reproducible and reliable results.

Comparing the coefficients of linear correlation (r), the results for 12 aliphatic alcohols give greater than 99% confidence that the r-values are different for *hGnet/RT* and molecular weight *(MW).* For the 15 aliphatic ketones, greater than 90% confidence interval is obtained for different r-values for TSA and *MW,* These results support the contention that simple structural modifications of aliphatic homologous compounds can be used to predict the effect of solutesolvent-sorbent interactions on adsorption. The *c+* theory can thus be used to rankorder adsorption intensity of these compounds from the aqueous phase onto activated carbon.

McKay, G. (1984), Analytical solution using a pore diffusion model for a pseudoir reversible isotherm for the adsorption of basic dye on silica. *AIChE Journal*, **30** (4), 692-697.

Full Text: [1984\AIChE J30, 692.pdf](1984/AIChE%20J30,%20692.pdf)

Abstract: An analytical solution for a two resistance mass transfer model explaining the adsorption of Astrazone Blue dye (Basic Blue 69) onto Sorbsil silica has been developed. The model includes a film mass transfer coefficient, kf, = 80×10-6 cm-s-1, and an internal effective diffusivity, Deff = 18×10-9 cm2.s-1 which controls the internal mass transport processes based on a pore diffusion mechanism.

McKay, G. (1985), The adsorption of dyestuffs from aqueous solutions using activated carbon: An external mass transfer and homogeneous surface diffusion model. *AIChE Journal*, **31** (2), 335-339.

Full Text: [1985\AIChE J31, 335.pdf](1985/AIChE%20J31,%20335.pdf)

Costa, E., Calleja, G. and Domingo, F. (1985), Adsorption of gaseous hydrocarbons on activated carbon: Characteristic kinetic curve. *AIChE Journal*, **31** (6), 982-991.

Full Text: [1985\AIChE J31, 982.pdf](1985/AIChE%20J31,%20982.pdf)

Abstract: The internal diffusion coefficients, Di, of pure methane, ethane and ethylene as well as some of their binary and ternary mixtures, have been calculated at 20°C for solid particles of a commercial activated carbon. It has been observed that the contribution of the surface migration mechanism to the global mass transfer process inside the adsorbent particles can be as much as 70-80%. Values for the surface migration coefficient Ds have also been calculated from the relation Di = Dg + KD,, where K is a dimensionless mean slope factor. Values found for both coefficients are of the same order of magnitude as those reported in the literature for similar systems.

All the values for the internal diffusion coefficients of these pure components and their mixtures fit into a single correlation curve, the characteristic kinetic curve of the adsorbent.

Do, D.D. and Rice, R.G. (1986), Validity of the parabolic profile assumption in adsorption studies. *AIChE Journal*, **32** (1), 149-154.

Full Text: [1986\AIChE Journal32, 149.pdf](1986/AIChE%20Journal32,%20149.pdf); [A\AIChE Journal32, 149.pdf](A/AIChE%20Journal32,%20149.pdf)

Doong, S.J. and Yang, R.T. (1986), Bulk separation of multicomponent gas mixtures by pressure swing adsorption: Pore/surface diffusion and equilibrium models. *AIChE Journal*, **32** (3), 397-410.

Full Text: [1986\AIChE J32, 397.pdf](1986/AIChE%20J32,%20397.pdf)

Abstract: A theoretical and experimental study is performed for the bulk separation of a ternary mixture by pressure swing adsorption. Three concentrated products can be obtained by cycling the pressure in the adsorber. Three models are formulated for the cyclic process: equilibrium, Knudsen diffusion, and Knudsen plus surface diffusion. The latter model provides the best results when compared with the experimental data, due to the important contribution of surface flux to the total flux in the sorbent pores.

Talu, O. and Zwiebel, I. (1986), Multicomponent adsorption equilibria of nonideal mixtures. *AIChE Journal*, **32** (8), 1263-1276.

Full Text: [1986\AIChE J32, 1263.pdf](1986/AIChE%20J32,%201263.pdf)

Abstract: Experimental gas-solid adsorption measurements were made on the binary and ternary mixtures of H2S, CO2, and C3H8 on H-mordenite molecular sieve zeolite at 30°C. The C3H8 containing binaries and the ternary mixture exhibited nonideal behavior, as evidenced by the azeotropelike crossovers in the composition domains and by the peaks in the total amount adsorbed surface. The ternary data were successfully predicted with the activity coefficients calculated by the spreading-pressure-dependent equation. Models that neglect the spreading-pressure dependence can only qualitatively predict the nonidealities.

Arve, B.H. and Liapis, A.I. (1987), Modeling and analysis of biospecific adsorption in a finite bath. *AIChE Journal*, **33** (2), 179-193.

Full Text: [1987\AIChE J33, 179.pdf](1987/AIChE%20J33,%20179.pdf)

Abstract: A general model is presented and used to predict the dynamic behavior of the adsorption and wash stages of biospecific adsorption (affinity chromatography) in a finite bath. The model accounts for film and diffusional mass transfer resistances as well as for the rates of interaction between adsorbates and ligands. The model is applicable to single and multicomponent biospecific as well as nonspecific adsorption, and the adsorbates may be monovalent or multivalent. The predictions of the model are compared with the experimental data of the adsorption of pgalactosidase onto immobilized anti-P-galactosidase.

The results of biospecific adsorption of bivalent adsorbates indicate that a competition for ligands occurs between molecules forming onsite interaction and two-site interaction complexes. This competition can lead to the displacement of the adsorbate from the adsorbateligand complex whose formation is least favored.

Aharoni, C. (1987), Adsorption by nonhomogeneous porous solids: Effect of adsorption energy gradient on surface flow. *AIChE Journal*, **33** (2), 303-306.

Full Text: [1987\AIChE J33, 303.pdf](1987/AIChE%20J33,%20303.pdf)

Doong, S.J. and Yang, R.T. (1987), Bidisperse pore diffusion model for zeolite pressure swing adsorption. *AIChE Journal*, **33** (6), 1045-1049.

Full Text: [1987\AIChE J33, 1045.pdf](1987/AIChE%20J33,%201045.pdf)

Ho, T.C. and Aris, R. (1987), On apparet second-order kinetics. *AIChE Journal*, **33** (6), 1050-1051.

Full Text: [1987\AIChE J33, 1050.pdf](1987/AIChE%20J33,%201050.pdf)

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Full Text: [1987\AIChE J33, 1215.pdf](1987/AIChE%20J33,%201215.pdf)

Valenzuela, D.P., Myers, A.L., Talu, O. and Zwiebel, I. (1988), Adsorption of gas mixture: Effect of energetic heterogeneity. *AIChE Journal*, **34** (3), 397-402.

Full Text: [1988\AIChE J34, 397.pdf](1988/AIChE%20J34,%20397.pdf)

Abstract: The ideal adsorbed solution (IAS) theory of adsorption of gas mixtures is extended to the case of energetic heterogeneity. A heterogeneous ideal adsorbed solution (HIAS) behaves ideally on a particular site, but energetic heterogeneity causes a segregation in the composition of the adsorbed phase. Equilibrium properties are obtained by integrating over a multivariate energy distribution based upon perfect positive correlation of site energies. The fact that predictions from HlAS are always an improvement over IAS indicates that heterogeneity is a factor that must be considered in theories of mixed-gas adsorption. Errors in HlAS predictions may be caused by steric exclusion of the larger molecules from micropores accessible to smaller molecules.

? Triday, J. and Smith, J.M. (1988), Dynamic behavior of supercritical extraction of kerogen from shale. *AIChE Journal*, **34** (4), 658-668.

Full Text: [1988\AIChE J34, 658.pdf](1988/AIChE%20J34,%20658.pdf)

Abstract: A model is presented for the supercritical reaction-extraction of a solid component from a bed of porous particles through which the solvent flows. Accounted for are reaction at an intraparticle position, pore diffusion, interphase mass and heat transfer, and flow in a differential reactor. The behavior of the bed is dynamic since both temperature and concentration of extractable solid vary with time.

The model is compared with experimental data for the extraction with toluene of kerogen from a bed of Colorado shale particles. Curves of effluent bitumen concentration vs. time were measured and fitted with predicted curves to evaluate three parameters: preexponential factor and activation energy for the conversion of insoluble kerogen to soluble bitumen, and the diffusivity of toluene at the critical point. The predicted curves agreed well with the experimental results and gave reasonable values for the parameters. Rates of reaction-extraction as well as extraction curves exhibited a sharp dip as the reactor was heated through the critical temperature.

Talu, O. and Myers, A.L. (1988), Rigorous thermodynamic treatment of gas adsorption. *AIChE Journal*, **34** (11), 1887-1893.

Full Text: [1988\AIChE J34, 1887.pdf](1988/AIChE%20J34,%201887.pdf)

Abstract: Multicomponent adsorption equilibria are predicted from theories based on experimental data for single-gas adsorption isotherms. Theories of multicomponent adsorption differ in the details of their results but should agree in special cases such as low surface coverage and ideal solution behavior. This paper is a summary of rules, limits, and consistency requirements that apply to adsorption of single gases end their mixtures. These rules and limits provide a basis for comparing theories with each other and with experimental data.

Notes: highly cited

? Brennecke, J.F. and Eckert, C.A. (1989), Phase-equilibria for supercritical fluid process design. *AIChE Journal*, **35** (9), 1409-1427.

Full Text: [1989\AIChE J35, 1409.pdf](1989/AIChE%20J35,%201409.pdf)

Abstract: Supercritical fluids (SCF’s) are powerful solvents with many unique properties. They have great potential for many extraction processes, but reliable and versatile mathematical models of the phase equilibrium thermodynamics are needed for their use in process design and economic feasibility studies. This paper reviews existing experimental data and analytical methods and attempts to delineate their strengths and limitations. Also discussed are new data needs and possible new directions for a better fundamental understanding of the molecular processes in SCF solutions.

Notes: highly cited

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Full Text: [1990\AIChE J36, 1785.pdf](1990/AIChE%20J36,%201785.pdf)

Abstract: Pendant drop tensiometry enhanced by video-image digitization is shown to be a useful tool for the experimental measurement of the relaxation in interfacial tension due to the adsorption of surfactant at a fluid interface. Using this method, profiles of the relaxation in surface tension of a diffusion-controlled, nonionic polyethoxy surfactant were measured. A diffusion coefficient was computed by comparing these profiles with numerical solutions of the bulk surfactant diffusion equation and a Frumkin equilibrium adsorption isotherm. This comparison was made for the entire relaxation period. This method establishes a more reproducible diffusion coefficient than current techniques that utilize only the short- or long-time parts of the relaxation spectrum. In addition, lower bounds on the kinetic constants for the sorption process are inferred for the polyethoxy surfactant used by comparing numerical solutions of mixed diffusion and surface kinetic transfer with the diffusion-limited result.

Keywords: Adsorption, Bubble Pressure Method, Equilibrium, Fluid Interfaces, Interfacial-Tensions, Kinetics, Model, Nonionic Surfactants, Oil, Shapes, Sorption, Surfactant, Volume, Water Interface

? Jacobson, S., Golshanshirazi, S. and Guiochon, G. (1991), Isotherm selection for band profile simulations in preparative chromatography. *AIChE Journal*, **37** (6), 836-844.

Full Text: [1991\AIChE J37, 836.pdf](1991/AIChE%20J37,%20836.pdf)

Abstract: Equilibrium adsorption data for the N-benzoyl derivatives of D- and L-phenyl alanine in water/propanol solutions have been determined on a chiral-selective stationary bovine serum albumin immobilized on silica. These data are well accounted for by an isotherm equation resulting from the sum of two Langmuir terms. The first term corresponds to the chiral-selective interactions, and the second to the nonselective molecular interactions between the enantiomers and the stationary phase. The individual band profiles of the two enantiomeric amino acids, either pure or in binary mixtures of various compositions, are predicted exactly by an equilibrium dispersive model using this bi-Langmuir isotherm. A classical Langmuir isotherm fails to predict these band profiles, illustrating the importance to collect accurate adsorption data and to use a correct isotherm model when calculating chromatographic band profiles.

Keywords: Protein Stationary Phases, Nonlinear Liquid-Chromatography, Bovine Serum-Albumin, Optical Resolution, Mobile Phase, Ideal Model, Affinity-Chromatography, Numerical-Simulation, Computer-Simulation, Binary Mixture

Gu, T., Tsai, G.J. and Tsao, G.T. (1991), Multicomponent adsorption and chromatography with uneven saturation capacities. *AIChE Journal*, **37** (9), 1333-1340.

Full Text: [1991\AIChE J37, 1333.pdf](1991/AIChE%20J37,%201333.pdf)

Abstract: In chromatographic separations involving elutes with large differences in the molecular size, the adsorption saturation capacities of the elutes may differ because of the differences in the degree of size exclusion. With uneven saturation capacities, isotherm crossovers may occur, which often results in selectivity reversal. In this work, a new multicomponent isotherm has been developed for this kind of system. The isotherm is an extension of the common multicomponent Langmuir isotherm and introduces no or a very limited number of new parameters for its construction. The isotherm crossover conditions have also been derived. Simulations based on a general rate model using the new isotherm have successfully demonstrated the phenomena of peak reversal and crossover of breakthrough curves.

Keywords: Analytical Affinity-Chromatography, Separations, Performance, Constants, Isotherms, Silica

? Ackley, M.W. and Yang, R.T. (1991), Diffusion in ion-exchanged clinoptilolites. *AIChE Journal*, **37** (11), 1645-1656.

Full Text: [1991\AIChE J37, 1645.pdf](1991/AIChE%20J37,%201645.pdf)

Abstract: The two-dimensional channel structure of clinoptilolite has been altered systematically by ion exchange to study the effects of cation type, size, location, and distribution on the diffusion of N2 and CH4 probe molecules. Concentration-dependent diffusion time constants (D/L2) were determined from gravimetric uptake measurements for fully-exchanged K+, Na+, and H+ clinoptilolites, and highly-exchanged Ca2+ (89%) and Mg2+ (72%) clinoptilolites. Both plane sheet and parallel channel diffusion models were developed from the one-dimensional plane sheet diffusion equation and fit to the uptake data. Resulting values of D/L2 varied by a factor of more than 1,000 for both N2 and CH4, while kinetic selectivity spanned nearly two orders of magnitude for this group of modified clinoptilolites. Achieving this range in performance for the difficult N2/CH4 separation demonstrates the excellent potential for tailoring clinoptilolite by cation manipulation for the kinetic separation of other gas mixtures.

Keywords: 2-Component Diffusion, Zeolite ZSM-5, One-Component, Sorption

Notes: highly cited

? Wong, D.S.H. and Sandler, S.I. (1992), A theoretically correct mixing rule for cubic equations of state. *AIChE Journal*, **38** (5), 671-680.

Full Text: [1992\AIChE J38, 671.pdf](1992/AIChE%20J38,%20671.pdf)

Abstract: A new mixing rule developed for cubic equations of state equates the excess Helmholtz free energy at infinite pressure from an equation of state to that from an activity coefficient model. Use of the Helmholtz free energy insures that the second virial coefficient calculated from the equation of state has a quadratic composition dependence, as required by statistical mechanics. Consequently, this mixing rule produces the correct low- and high-density limits without being density-dependent.

As a test, the mixing rule is used for ternary mixtures of cyclohexane + benzene + water, ethanol + benzene + water and carbon dioxide + n-propane + water, and all the constituent binaries. The new mixing rule and a simple cubic equation of state can be used for the accurate correlation of vapor-liquid and liquid-liquid equilibria for binary mixtures. Using the parameters obtained from binary systems, the phase behavior of ternary mixtures can be predicted. Also, unlike previous empirical mixing rules, this theoretically based mixing rule is equally applicable and accurate for simple mixtures containing hydrocarbons and inorganic gases and mixtures containing polar, aromatic and associating species over a wide range of pressures. This mixing rule makes it possible to use a single equation of state model with equal accuracy for mixtures usually described by equations of state and for those traditionally described by activity coefficient models. It is the correct bridge between these two classes of models.

? Brooks, C.A. and Cramer, S.M. (1992), Steric mass-action ion exchange: Displacement profiles and induced salt gradients. *AIChE Journal*, **38** (12), 1969-1978.

Full Text: [1992\AIChE J38, 1969.pdf](1992/AIChE%20J38,%201969.pdf)

Abstract: he study of nonlinear competitive equilibrium is of fundamental importance in understanding the behavior of proteins in preparative ion-exchange chromatographic separations. In this work we present a steric mass-action (SMA) ion-exchange equilibrium formalism, which explicitly accounts for the steric hindrance of salt counterions upon protein binding in multicomponent equilibria. An analytical solution has been derived for the calculation of isotachic effluent profiles of displaced proteins and induced salt gradients under ideal chromatographic conditions. A stability analysis has been employed to establish the order of the feed components in the displacement train. Theoretical predictions are compared to experimental results for the separation of proteins by cation-exchange displacement chromatography. These results demonstrate the efficacy of the SMA formalism in predicting complex behavior present in ion-exchange displacement systems. Furthermore, the analytical solution of ideal isotachic displacement profiles with the SMA formalism enables rapid methods development and optimization of ion-exchange displacement separations.

Keywords: Performance Liquid-Chromatography, Computer-Simulations, Retention Model, Proteins, Carboxymethyldextrans, Separation, Adsorption

Hu, X., Rao, G.N. and Do, D.D. (1993), Effect of energy distribution on sorption kinetics in bidispersed particles. *AIChE Journal*, **39** (2), 249-261.

Full Text: [1993\AIChE J39, 249.pdf](1993/AIChE%20J39,%20249.pdf)

Abstract: In this article, we present a model to describe sorption kinetics of gaseous adsorbates on to bidispersed heterogeneous microporous particles. This model describes adsorption and desorption of gaseous adsorbates with allowance for the energy distribution of adsorption site for both equilibrium isotherm and diffusion of the adsorbed species. The adsorbed species of all energy level diffuse in two directions inside the particle. One direction is the direction along the particle coordinate while the other is the direction perpendicular to the particle coordinate (that is, the direction into the grain of the solid). This model is more fundamental than models previously proposed by Do and coworkers. Effects of energy distribution on the adsorption and desorption dynamics are investigated. Extensive experimental analysis of adsorption and desorption dynamics of ethane and propane onto Ajax activated carbon are carried out to validate this theory.

Keywords: Energetically Heterogeneous Surfaces, Adsorbed Gases, Diffusion, Adsorption, Pore

Harriott, G.M. (1993), Memory-integral mass-transfer models for adsorption process simulation. *AIChE Journal*, **39** (3), 422-433.

Full Text: [1993\AIChE J39, 422.pdf](1993/AIChE%20J39,%20422.pdf)

Abstract: The memory integral based on convolution of the unit step response to loading a clean pellet with concentration history at the pellet surface is proposed for computations of mass transfer in adsorption process simulation. Although rate laws are widely used to describe diffusion and sorption in pellets for slow (Glueckauf, 1955) and moderate (Kim, 1989) rates of mass transfer, these models fail to describe mass transfer at short contact times because the concentration history experienced by the pellet is not accounted for. To facilitate memory integral computations, approximations to the unit step response to loading a clean pellet are derived based on a single moving finite element and by asymptotic matching in time. Numerical evaluation of the memory integral is demonstrated on simple cycles which show the merits of this approach.

Keywords: Pore Diffusion-Model, Fixed-Bed Adsorption, Intraparticle Diffusion, Approximation, Desorption

Gilbert, S.W. (1993), Linear algebraic solution for multicomponent adsorption on porous media. *AIChE Journal*, **39** (3), 518-520.

Full Text: [1993\AIChE J39, 518.pdf](1993/AIChE%20J39,%20518.pdf)

Hu, X. and Do, D.D. (1993), Role of energy distribution in multicomponent sorption kinetics in bidispersed solids. *AIChE Journal*, **39** (10), 1628-1640.

Full Text: [1993\AIChE J39, 1628.pdf](1993/AIChE%20J39,%201628.pdf)

Abstract: The heterogeneous macropore, surface and micropore diffusion model recently proposed by Hu et al. (1993) for single-component systems is extended to multi-component systems in the description of sorption kinetics of gaseous adsorbates in bidispersed (macropore and micropore diffusions), heterogeneous microporous particles. This model describes sorption of gaseous adsorbates with allowance for the energy distribution of adsorption site for both equilibrium and diffusion of the adsorbed species. A uniform distribution is used to describe this energy distribution, and the cumulative energy distribution function is assumed the same for all species in the analysis of multicomponent mixtures. Extensive experimental data of ethane and propane in Ajax activated carbon are collected to study the effects of energy distribution on the binary adsorption, desorption, and displacement dynamics.

Keywords: Energetically Heterogeneous Adsorbents, Surface-Diffusion, Adsorption-Isotherm, Gas-Mixtures, Model

? Chatzopoulos, D., Varma, A. and Irvine, R.L. (1993), Activated carbon adsorption and desorption of toluene in the aqueous-phase s. *AIChE Journal*, **39** (12), 2027-2041.

Full Text: [1993\AIChE J39, 2027.pdf](1993/AIChE%20J39,%202027.pdf)

Abstract: The equilibrium and dynamics of toluene adsorption and desorption in single-component aqueous solutions were investigated. Adsorption rates in a batch reactor under a variety of operating conditions were fitted successfully with the homogeneous surface diffusion model and a surface diffusion coefficient that increases exponentially with surface concentration. The dependence of the external mass-transfer coefficient on the hydrodynamic conditions in the liquid phase was taken into account. Desorption studies in the aqueous phase and solvent regeneration of toluene-loaded activated carbon suggest that only a small fraction of toluene adsorbs irreversibly. Moreover, irreversible adsorption occurs only on virgin activated carbon, while adsorption on solvent-regenerated activated carbon is fully reversible. After accounting for irreversible adsorption, the model successfully predicted toluene desorption rates in the aqueous phase under various operating conditions using toluene transport parameters determined from the adsorption studies.

Keywords: 2 Dissolved Organics, Surface-Diffusion, Concentration-Dependence, Mass-Transfer, Irreversible Adsorption, Competitive Adsorption, Solvent Regeneration, Agitated Vessels, Adsorbed Gases, Liquid

Ahn, D.J. and Franses, E.I. (1994), Ion adsorption and ion-exchange in ultrathin films of fatty-acids. *AIChE Journal*, **40** (6), 1046-1054.

Full Text: [1994\AIChE J40, 1046.pdf](1994/AIChE%20J40,%201046.pdf)

Abstract: Ion exchange equilibria of ultrathin Langmuir and Langmuir-Blodgett films of stearic and arachidic acids in contact with aqueous electrolyte solutions were studied experimentally and theoretically. A model considering electrochemical and thermodynamic aspects of the adsorption of protons, calcium, and cadmium ions from solution to the film has been developed. Key parameters are the binding constants (K’s) of ions and the mixing characteristics (or Flory-Huggins interaction parameters chi’s) of ions in the two-dimensional film lattice plane. The ternary system can be described by the parameter values determined with binary proton-calcium ion, proton-cadmium ion, and calcium-cadmium ion systems: K(Ca) = 2.9×102, K(Cd) = 8.6×103, K(H) = 3.6×106, chi(H-Ca) = -0.76, chi(H-Cd) = 0.13, and chi(Ca-Cd) = 1.0. Competitive ion adsorption was measured by FTIR ATR spectroscopy of either collapsed or ordered LB films. Data for the proton-calcium-cadmium ion system agreed well with the model predictions. The results show possible future applications of such thin films as ion sensors or ion exchange materials.

Keywords: Langmuir-Blodgett-Films, Reflection Absorption-Spectroscopy, Molecular Monolayers, Water-Interface, Arachidic Acid, Metal-Ions, Ftir-Atr, Orientation, Stability

Jin, X., Talbot, J. and Wang, N.H.L. (1994), Analysis of steric hindrance effect on adsorption kinetics and equilibria. *AIChE Journal*, **40** (10), 1685-1696.

Full Text: [1994\AIChE J40, 1685.pdf](1994/AIChE%20J40,%201685.pdf)

Abstract: Most existing adsorption models do not properly consider steric hindrance effects of preadsorbed solutes. As a consequence, the models often fail to represent the adsorption kinetics and equilibria accurately. In this work, we extend the random sequential adsorption concept for irreversible adsorption to analyze reversible adsorption on a continuous surface and a random site surface. Based on simulation results of these processes, general kinetic equations for one-component adsorption are developed. The equations are used to correlate chromatography frontal curves of lysozyme and isotherm data of ethane adsorption on activated carbon and ethylene adsorption on a molecular sieve. The significance of the equations, as compared with the Langmuir equation, lies not only in their ability to correlate the experimental data more accurately, but in the physical significance of the adsorption parameters such as the maximum adsorption capacity obtained from the correlation. Our study shows that steric hindrance effects alone result in nonlinear Scatchard and Hill plots with negative cooperativity.

Keywords: Random Sequential Adsorption, Performance Liquid-Chromatography, Ion-Exchange Chromatography, Retention Model, Surfaces, Proteins, Dynamics, Carbon, Disks, State

? Robinson, S.M., Arnold, W.D. and Byers, C.H. (1994), Mass-transfer mechanisms for zeolite ion-exchange in waste-water treatment. *AIChE Journal*, **40** (12), 2045-2054.

Full Text: [1994\AIChE J40, 2045.pdf](1994/AIChE%20J40,%202045.pdf)

Abstract: In spite of the increasing commercial use of zeolites for binary and multicomponent ion exchange, understanding of the basic mass-transfer processes associated with multicomponent zeolite systems is quite limited. This study evaluates Na-Ca-Mg-Cs-Sr ion exchange from an aqueous solution using a chabazite zeolite. Mass-transfer coefficients are determined from experimental batch-reactor data for binary and multicomponent systems. The experimental data indicate that diffusion through the microporous zeolite crystals is the primary diffusional resistance. Macropore diffusion also significantly contributes to the mass-transfer resistance. Various mass-transfer models are compared with the experimental data to determine values for intraparticle diffusivities. Effective diffusivities obtained accurately predict experimental data using a variety of models. Only the model accounting for micropore and macropore diffusion occurring in series accurately predict multicomponent data using diffusivities from the binary system. Liquid and surface diffusion both contribute to macropore diffusion. Surface and micropore diffusivities are concentration-dependent for the system of interest.

Keywords: Activated Carbon, Fixed-Beds, Multicomponent Adsorption, Numerical-Simulation, Organic-Compounds, Diffusion Control, Molecular-Sieves, Model, Transport, Systems

Hu, X. and Do, D.D. (1995), Validity of isothermality in adsorption kinetics of gases in bidispersed solids. *AIChE Journal*, **41** (6), 1581-1584.

Full Text: [1995\AIChE J41, 1581.pdf](1995/AIChE%20J41,%201581.pdf)

Keywords: Energy-Distribution, Sorption Kinetics

Hu, X. and Do, D.D. (1995), Comparing various multicomponent adsorption equilibrium models. *AIChE Journal*, **41** (6), 1585-1592.

Full Text: [1995\AIChE J41, 1585.pdf](1995/AIChE%20J41,%201585.pdf)

Keywords: Gas-Mixtures, Heterogeneous Surfaces, Activated Carbon, Prediction, Kinetics

Ma, Z., Whitley, R.D. and Wang, N.H.L. (1996), Pore and surface diffusion in multicomponent adsorption and liquid chromatography systems. *AIChE Journal*, **42** (5), 1244-1262.

Full Text: [1996\AIChE J42, 1244.pdf](1996/AIChE%20J42,%201244.pdf)

Abstract: A generalized parallel pore and surface diffusion model for multicomponent adsorption and liquid chromatography is formulated and solved numerically. Analytical solution for first- and second-order central moments for a pulse on a plateau input is used as benchmarks for the numerical solutions. Theoretical predictions are compared with experimental data for two systems: Ion-exchange of strontium, sodium and calcium in a zeolite and competitive adsorption of two organics on activated carbon. In a linear isotherm region of single-component systems, both surface and pore diffusion cause symmetric spreading in breakthrough curves. In a highly nonlinear isotherm region, however, surface diffusion causes pronounced tailing in breakthrough curves; the larger the step change in concentration, the more pronounced tailing, in contrast to relatively symmetric breakthroughs due to pore diffusion. If only a single diffusion mechanism is assumed in analyzing the data of parallel diffusion systems, a concentration-dependent apparent surface diffusivity or pore diffusivity results; for a convex isotherm, the apparent surface diffusivity increases, whereas the apparent pore diffusivity decreases with increasing concentration. For a multicomponent nonlinear system, elution order can change if pore diffusion dominates for a low-affinity solute, whereas surface diffusion dominates for a high-affinity solute.

Chiang, A.S.T., Lee, C.K. and Wu, F.Y. (1996), Theory of adsorbed solutions: Analysis of one-dimensional systems. *AIChE Journal*, **42** (8), 2155-2161.

Full Text: [1996\AIChE J42, 2155.pdf](1996/AIChE%20J42,%202155.pdf)

Abstract: A general formulation for I-D multicomponent localized adsorption is presented, as well as a new mixing function that varies with only temperature and spreading pressure. An understanding of this mixing function completely determines the solution thermodynamics of the system. A closed-form expression for the adsorbed-phase excess Gibbs energy exhibiting an explicit dependence on the spreading pressure is thus obtained. The empirical expression proposed in the literature for the adsorbed-phase excess Gibbs energy is found to be consistent with the exact solution obtained in one dimension. The new mixing function further suggests the possibility of considering a binary adsorbed solution as the adsorption of a pseudo adsorbate.

Keywords: Gas-Mixtures, Adsorption, Micropores, Molecules

Tamon, H., Kitamura, K. and Okazaki, M. (1996), Adsorption of carbon monoxide on activated carbon impregnated with metal halide. *AIChE Journal*, **42** (2), 422-430.

Full Text: [1996\AIChE J42, 422.pdf](1996/AIChE%20J42,%20422.pdf)

Abstract: Activated carbon was impregnated with a metal halide, and adsorption and desorption characteristics of CO on the carbon were measured by fixed-bed runs. It was found that the impregnation of PdCl2 or CuCl effectively increases CO absorption. PdCl2/CuCl-impregnated carbons were characterized by N2 adsorption, SEM, EPMA, and XPS. Adsorption isotherms of CO were also measured on these carbons, and the influence of the loading of impregnant on CO adsorption was experimentally elucidated. A selection procedure of impregnant was proposed based on the frontier orbital theory. The perturbation energy for molecular orbital mixing was estimated by the HOMO-LUMO interaction. CO adsorption on impregnated carbons was qualitatively interpreted using the perturbation energy, and the energy was regarded as an index of impregnant selection.

Keywords: Amorphous Silica, Free Hydroxyl, Abinitio Calculations, Silanol, Model, Zeolites, Complex, Water

? Hsu, Y.C. and Huang, C.J. (1996), Characteristics of a new gas-induced reactor. *AIChE Journal*, **42** (11), 3146-3152.

Full Text: [1996\AIChE J42, 3146.pdf](1996/AIChE%20J42,%203146.pdf)

Abstract: Newly developed gas-induced reactor for gas-liquid heterogeneous reactions presented here has no baffle on the inner wall of the rank body. inside the reactor tank, two in-series 45 degrees pitched blade downward turbines enclosed by a draft tube were employed. As the turbines rotate at high speeds, a central gas vortex is formed downwardly along the central shaft from the free surface of the liquid toward the upper turbine. The gas is then induced by the upper turbine and mixes with the input gas. After that, the mixed gas is broken into bubbles by the lower turbine and dispersed through the liquid vortex. With the formation of gas and liquid vortexes, the reactive gas was able to circulate in the liquid phase to achieve high gas utilization. The experimental studies were on the heterogeneous ozonation reaction of a reactive dye (C.I. Reactive Blue 19). Major experimental parameters, such as impeller speed, input concentration of ozone, input flow rate of ozone and liquid volume, were changed to investigate the characteristics of the gas-induced reactor. This gas-induced reactor achieved high gas utilization ratio, short reaction time, and high recovery of the unreactive gas.

Keywords: Dissociating Organic-Compounds, Inorganic-Compounds, Rate Constants, Ozone, Water, Tank

Malek, A. and Farooq, S. (1996), Comparison of isotherm models for hydrocarbon adsorption on activated carbon. *AIChE Journal*, **42** (11), 3191-3201.

Full Text: [1996\AIChE J42, 3191.pdf](1996/AIChE%20J42,%203191.pdf)

Abstract: The characteristics of 7 different isotherm models for hydrocarbon adsorption on activated carbon are compared. The goodness of data fit, the limiting behaviors and the pressure and temperature derivatives of the models were investigated. The work provides a general basis for making a preliminary selection of an effective model for a given application.

Keywords: Pressure Swing Adsorption, Vacancy Solution Theory, Pore-Diffusion Model, Gas-Mixtures, Heterogeneous Adsorbents, Equilibrium-Models, Surface-Diffusion, Bulk Separation, Equation, Methane

? Malek, A. and Farooq, S. (1997), Kinetics of hydrocarbon adsorption on activated carbon and silica gel. *AIChE Journal*, **43** (3), 761-776.

Full Text: [1997\AIChE J43, 761.pdf](1997/AIChE%20J43,%20761.pdf)

Abstract: Experimental breakthrough results of methane, ethane and propane in activated carbon and silica gel obtained over a wide range of gas compositions, bed pressures, interstitial velocities, and column temperatures were analyzed using a dynamic, nonisothermal, nontrace column breakthrough model. A linear driving force (LDF) approximation is used for particle uptake, and the Langmuir-Freundlich isotherm represents adsorption equilibrium. The LDF mass-transfer-rate coeficient (and, hence, effective particle difssivity) and column-wall heat-transfer coeficient were determined. The results show that hydrocarbon transport in the activated carbon particles used is essentially by Knudsen and suface flow, while for the silica gel used the transport is primarily by Knudsen flow. For activated carbon, the experimentally derived LDF coefficients for all three sorbates are well correlated using an average effective difssivity value. With regard to heat transfer, the column-wall Nusselt number is approximately constant for the range of Reynolds numbers considered. Simulations of multicomponent breakthrough in the activated-carbon bed based on independently measured single-component kinetic parameters and the extended Langmuir-Freundlich isotherm agree very well with experimental results. The computational eficiency gained by adopting the simpler extended Langmuir isotherm model is also investigated.

Miyabe, K. and Takeuchi, S. (1999), Model for surface diffusion in liquid-phase adsorption. *AIChE Journal*, **43** (11), 2997-3006.

Full Text: [A\AIChE J43, 2997.pdf](A/AIChE%20J43,%202997.pdf)

Abstract: Based on the absolute-rate theory a consistent interpretation was provided for the dependence of surface-diffusion coefficient, D-s, on temperature and the amount adsorbed in various liquid-phase adsorption systems, such as the Langmuir-, Freundlich-and Jossens-type adsorption. It was demonstrated that a restricted molecular diffusion model for surface diffusion was useful for the analysis of the characteristic features of D-s. A formulation of D-s was derived based on the model and was applied to the analysis of surface-diffusion phenomena in various adsorption systems. The temperature dependence could be interpreted by assuming surface diffusion as an activated process. By taking into account the change in both the logarithmic slope of an adsorption isotherm and an adsorption potential, the concentration dependence of D-s could be interpreted irrespective of the type of the adsorption isotherms.

Keywords: Octadecylsilyl-Silica Gel, Activated Carbon, Concentration-Dependence, Aqueous-Solutions, Filled Pores, Chromatography, Equilibrium, Adsorbents, Isotherm

Ravindran, V., Stevens, M.R., Badriyha, B.N. and Pirbazari, M. (1999), Modeling the sorption of toxic metals on chelant-impregnated adsorbent. *AIChE Journal*, **45** (5), 1135-1146.

Full Text: [A\AIChE J45, 1135.pdf](A/AIChE%20J45,%201135.pdf)

Abstract: The application of a microporous adsorbent, such as activated carbon impregnated with 8-hydroxyquinoline (oxine), a chelating agent, to remove toxic metals from the aqueous phase is studied. A pore and surface diffusion model for predicting the dynamics of fixed-bed absorbers using oxine-impregnated carbon is also discussed. The model incorporates adsorption equilibrium and kinetic parameters determined from independent isotherm tests and rate experiments, as well as adsorber column flow characteristics. Three modeling scenarios were employed with reference to intraparticle transport: (a) combined-pore diffusion and surface diffusion; (b) pore diffusion alone, suppressing the effect of surface diffusion; and (c) surface diffusion alone, suppressing the effect of pore diffusion. Surface diffusion alone provided reasonably good predictions of the adsorber dynamics, as reflected by results from adsorber experiments. It is postulated that the sorption mechanism could be a combination of film transport of metal ions, followed by surface diffusion into adsorbent particles, and subsequent chelation of metal ions with the oxine molecules sorbed on carbon. The sorbed metals could be completely recovered under acidic conditions during the carbon regeneration process.

Keywords: Ordinary Differential Equations, Saturated Groundwater-Flow, Waste-Water, Organic-Compounds, Activated Carbon, Removal, Transport, Design, Bed

Bellot, J.C., Tarantino, R.V. and Condoret, J.S. (1999), Thermodynamic modeling of multicomponent ion-exchange equilibria of amino acids. *AIChE Journal*, **45** (6), 1329-1341.

Full Text: [A\AIChE J45, 1329.pdf](A/AIChE%20J45,%201329.pdf)

Abstract: A thermodynamic model was developed to describe phase equilibria for aqueous amino acid/polyelectrolyte gel systems. In the gel phase, activities of all exchangeable species (charged and neutral components) are calculated with the generalized FloryHuggins model. In the surrounding solution, a numerical procedure is used to allow for partial dissociation phenomena combined with a modified UNIFAC model associated with the Pitzer-Debye-Huckel term. The osmotic pressure difference between the two phases is also taken into account in the equations. The model enables the prediction of resin-phase composition, gel swelling and intraparticle pH. It can be used for various biochemicals in a wide range of concentrations. Its validity was successfully tested using binary and multicomponent exchange equilibria data of several amino acids (phenylalanine, alanine, proline, and glutamate) and HCI on a strong-acid cation-exchange resin (Amberjet 1200H).

Prasetyo, I. and Do, D.D. (1999), Adsorption kinetics of light paraffins in AC by a constant molar flow-rate method. *AIChE Journal*, **45** (9), 1892-1900.

Full Text: [A\AIChE J45, 1892.pdf](A/AIChE%20J45,%201892.pdf)

Abstract: A semibatch constant molar flow-rate technique developed earlier by Do was applied to a series of light paraffins adsorbing onto a number of adsorbents. The adsorption and diffusion of methane, ethane, propane and n-butane on activated carbon at different temperatures were studied to determine the diffusivity of surface diffusion and its activation energy. It was found that the surface diffusivity decreases with the molecular weight in an exponential manner and increases with temperature according to the Arrhenius law. The ratio of the activation energy for surface diffusion to the heat of adsorption increases with the carbon number. A mechanism for surface diffusion is suggested to explain this increase.

Turner, M.D., Laurence, R.L., Conner, W.C. and Yngvesson, K.S. (2000), Microwave radiation’s influence on sorption and competitive sorption in zeolites. *AIChE Journal*, **46** (4), 758-768.

Full Text: [A\AIChE J46, 758.pdf](A/AIChE%20J46,%20758.pdf)

Abstract: A study of the effect of microwave radiation on adsorption selectivity using the adsorption and desorption of cyclohexane and methanol on high-silica zeolites is presented. The quantity of microwave energy absorbed is dependent on the specific system of adsorbent and adsorbate. The adsorbent, a high-silica zeolite, is in effect transparent to microwave radiation, while high and low absorption of microwave energy is reflected by the 2 adsorbates.

Keyword: Adsorption/Kinetics, Zeolites, Microwaves/Industrial Applications

Helminen, J., Helenius, J., Paatero, E. and Turunen, I. (2000), Comparison of sorbents and isotherm models for NH3-gas separation by adsorption. *AIChE Journal*, **46** (8), 1541-1555.

Full Text: [A\AIChE J46, 1541.pdf](A/AIChE%20J46,%201541.pdf)

Abstract: Adsorption equilibrium isotherms of ammonia gas at temperatures between 298 and 393 K on 13X zeolite, 4A zeolite, alumina, silica gel, and activated carbon were compared to determine their applicability to ammonia gas separation. In the pressure range of 1 to 100 kPa, activated carbon displays its highest working capacity at 298 K and the work capacity decreases as temperature decreases, reaching a minimum at 393 K. The 2 zeolites offer almost the same working capacity, 3.0-3.5 mmol/g, over the full temperature range. Silica gel and alumina displayed low working capacities.

Keyword: Adsorption Isotherms, Ammonia, Gases/Separation

Qiao, S. and Hu, X. (2000), Use IAST with MPSD to predict binary adsorption kinetics on activated carbon. *AIChE Journal*, **46** (9), 1743-1752.

Full Text: [A\AIChE J46, 1743.pdf](A/AIChE%20J46,%201743.pdf)

Abstract: A model using the ideal adsorbed solution theory IAST coupled with the micro-pore-size distribution MPSD concept is proposed to describe the multicomponent adsorption equilibrium and kinetics of gases in activated carbon. To overcome the thermodynamic violation, the IAST instead of the extended Langmuir equation was used to calculate the local multicomponent adsorption equilibrium. The micropore size is related to the adsorbate-adsorbent interaction energy by the Lennard-Jones potential. The overall adsorption isotherm and the diffusion flux of the adsorbed species are the integrals of their corresponding localv alues over all micropore-size distribution range accessible by the adsorbate molecules. The size exclusion effect was taken into account in the competition of different sized molecules for a given pore. The model predictions were tested with the adsorption kinetics data of binary gases on Ajax and Norit activated carbon. The results were better than predictions of a previous multicomponent adsorption kinetics model also using the MPSD concept, but with the local multicomponent adsorption isotherm described by the extended Langmuir equation.

Humayun, R. and Tomasko, D.L. (2000), High-resolution adsorption isotherms of supercritical carbon dioxide on activated carbon. *AIChE Journal*, **46** (10), 2065-2075.

Full Text: [A\AIChE J46, 2065.pdf](A/AIChE%20J46,%202065.pdf)

Abstract: Supercritical fluids are attractive solvents for heterogeneous processes, including catalysis and adsorptive separation. However, adsorption processes in the near-critical region are poorly understood and exhibit unique behavior where the adsorption of the supercritical solvent plays an important role in the solute adsorption. The behavior of supercritical fluids in confined pores has been studied theoretically, but there are few experimental data on their behavior in industrially important microporous materials. The adsorption of carbon dioxide on Calgon F400 activated carbon over a wide range of pressures (0 - 20 MPa) at temperatures near the critical point of carbon dioxide (30 to 45ºC) was studied. Near-continuous adsorption and desorption isotherms were measured with a new flow gravimetric apparatus with precise control over pressure and temperature. As pressure is increased, the excess adsorption increases sharply at low pressures; then a broad maximum is observed. At temperatures greater than the critical temperature, there is a sharp drop in excess adsorption near the critical region where the density of the bulk fluid increases sharply. A crossover is observed near the critical region where, below a certain pressure, the excess adsorption decreases with temperature, while above the crossover point the trend is reversed. When analyzed as a function of solvent density, the crossover disappears, revealing an anomalous maximum in total adsorption near the critical point similar to the enhanced local density or “charisma” observed in binary solute - supercritical fluid systems. A 2-D EOS model using the 2-D Peng-Robinson EOS was able to qualitatively describe the adsorption behavior over the entire pressure range, but the quantitative agreement was poor in the near-critical region.

Hsu, Y.C., Chen, J.T., Yang, H.C. and Chen, J.H. (2001), Decolorization of dyes using ozone in a gas-induced reactor. *AIChE Journal*, **47** (1), 169-176.

Full Text: [A\AIChE J47, 169.pdf](A/AIChE%20J47,%20169.pdf)

Abstract: Treatability of aqueous dye solutions using a new gas-induced ozonator was investigated, as well as feasibility of decolorizing dyes using ozone, the ozone utilization efficiency, and the chemical oxygen demand (COD) under various pH values and initial dye concentrations. Experimental results indicate that al of the dyes used can be decolorized within 15 min. for most of the dyes used, ozone decolorizing was more rapid in acidic media. The ozone utilization efficiency can be raised to 90% or higher with proper agitation speeds. The ozone utilization efficiency and COD removal rate increased with an increase in pH value; however, the COD removal remained nearly constant for various categories of dye regardless of the initial dye concentration. The kinetics of decolorization were also examined.

Keywords: Textile-Industry Wastewaters, Aqueous-Solutions, Water, Decomposition, Ozonation, Oxidation, Kinetics

? Mauri, R., Shinnar, R., d’Amore, M., Giordano, P. and Volpe, A. (2001), Solvent extraction of chromium and cadmium from contaminated soils. *AIChE Journal*, **47** (2), 509-512.

Full Text: [2001\AIChE J47, 509.pdf](2001/AIChE%20J47,%20509.pdf)

Siperstein, F.R. and Myers, A.L. (2001), Mixed-gas adsorption. *AIChE Journal*, **47** (5), 1141-1159.

Full Text: [A\AIChE J47, 1141.pdf](A/AIChE%20J47,%201141.pdf)

Abstract: The prediction of multicomponent adsorption equilibria from single-component data is one of the most challenging and important problems in adsorption. The chief obstacle to progress is a scarcity of accurate and consistent experimental data over a wide range of temperature and loading for testing theories. Several binaries and one ternary system on two types of zeolites (silicalite and faujasite) were studied in a combination calorimeter-volumetric apparatus. Activity coefficients and excess functions for enthalpy, free energy, and entropy were extracted from the binary data using a three-constant equation to represent nonidealities. The successful correlation of binary excess functions with pure-component properties for type I isotherms on zeolites is a first step toward predicting multicomponent adsorption from single-gas adsorption and a major advancement over the theory of ideal adsorbed solutions.

Wesselingh, J.A. and Bosma, J.C. (2001), Protein ion-exchange adsorption kinetics. *AIChE Journal*, **47** (7), 1571-1580.

Full Text: [A\AIChE J47, 1571.pdf](A/AIChE%20J47,%201571.pdf)

Abstract: The kinetics of the adsorption of the protein BSA on the ion exchanger Q-Sepharose FF were measured for several values of the pH and ionic strength, using several techniques. The measurements were best described with a model incorporating both surface and pore diffusion and with the chemical potential gradient as the driving force for diffusion. The surface-diffusion coefficients from this model show an inverse exponential dependency on the binding strength. This dependency can be explained by an activated jump mechanism. The pore-diffusion coefficient is much lower than that in free solution, which is probably caused by a combination of steric and electric exclusion.

Linders, M.J.G., van den Broeke, L.J.P., Kapteijn, F., Moulijn, J.A. and van Bokhoven, J.J.G.M. (2001), Binary adsorption equilibrium of organics and water on activated carbon. *AIChE Journal*, **47** (8), 1885-1892.

Full Text: [A\AIChE J47, 1885.pdf](A/AIChE%20J47,%201885.pdf)

Abstract: Adsorption isotherms of hexafluoropropylene (HFP), methanol and ethanol were measured tinder dry and humid conditions using Norit RI carbon. The Presence of water lowered the HFP capacity over the whole pressure range as compared to the single component isotherm, while increasing the methanol and ethanol capacity. The Dubinin-Radushkevich equation was applicable for methanol, and ethanol, and the Dubinin-Astakhov equation gave a satisfactory description for water. The ideal adsorbed solution (IAS) theory satisfactorily described the binary, miscible systems of methanol and ethanol with water. Because water and HFP are not miscible, the IAS theory cannot be used. This binary system was described well by the independent co-adsorption of the two components, that is, HFP vapor is adsorbed in the micropore volume left free by water.

Keywords: Dynamic Adsorption, Myers-Prausnitz, Vapor Mixtures, Equation, Isotherm, Beds

Do, H.D., Do, D.D. and Prasetyo, I. (2001), Surface diffusion and adsorption of hydrocarbons in activated carbon. *AIChE Journal*, **47** (11), 2515-2525.

Full Text: [A\AIChE J47, 2515.pdf](A/AIChE%20J47,%202515.pdf)

Abstract: Adsorption and diffusion in a porous media were studied theoretically and experimentally with a differential transient permeation method. The porous medium is allowed to equilibrate at some specified loading, and then the time trajectory of the permeation process is followed after a small difference between the pressures at the end faces of the porous medium is introduced at time t = 0 +. Such a trajectory vs. time would contain adsorption and diffusion characteristics of the system. By studying this for various surface loadings, pore and surface diffusions can be fully characterized. Mathematical modeling of transient permeation is detailed for pure gases or vapors diffusion and adsorption in porous media. Effects of nonlinearity of adsorption isotherm, pressure, temperature and heat effects were considered in the model. Experimental data of diffusion and adsorption of propane, n-butane and n-hexane in activated carbon at different temperatures and loadings show the potential of this method as a useful tool to study adsorption kinetics in porous media. Validity of the model is best tested against the transient data where the kinetics curves exhibit sigmoidal shape, which is a result of the diffusion and adsorption rate during the initial stage of permeation.

Keyword: Reactors, Kinetics, Catalysis

Myers, A.L. (2002), Thermodynamics of adsorption in porous materials. *AIChE Journal*, **48** (1), 145-160.

Full Text: [A\AIChE J48, 145.pdf](A/AIChE%20J48,%20145.pdf)

Abstract: Thermodynamic equations are developed for adsorption of multicomponent gas mixtures in microporous adsorbents based on the principles of solution thermodynamics. The conventional spreading pressure and surface area variables, which describe 2-D films, must be abandoned for adsorption in micropores, in which spreading pressure cannot be measured experimentally or calculated from intermolecular forces. Adsorption is divided into two steps: (1) isothermal compression of the gas, (2) isothermal immersion of clean adsorbent in the compressed gas. Thermodynamic functions (Gibbs free energy, enthalpy, and entropy) from solution thermodynamics provide a complete thermodynamic description of the system. Applications are described for characterization of adsorbents, gas storage at high pressure, mixture adsorption, enthalpy balances, molecular simulation, adsorption calorimetry, and shape selectivity in catalysis.

? Ismadji, S. and Bhatia, S.K. (2003), Effect of pore-network connectivity on multicomponent adsorption of large molecules. *AIChE Journal*, **49** (1), 65-81.

Full Text: [2003\AIChE J49, 65.pdf](2003/AIChE%20J49,%2065.pdf)

Abstract: The effect of pore-network connectivity on binary liquid-phase adsorption equilibria using the ideal adsorbed solution theory (LAST) was studied. The liquid-phase binary adsorption experiments used ethyl propionate, ethyl butyrate, and ethyl isovalerate as the adsorbates and commercial activated carbons Filtrasorb-400 and Norit ROW 0.8 as adsorbents. As the single-component isotherm, a modified Dubinin-Radushkevich equation was used. A comparison with experimental data shows that incorporating the connectivity of the pore network and considering percolation processes associated with different molecular sizes of the adsorptives in the mixture, as well as their different corresponding accessibility, can improve the prediction of binary adsorption equilibria using the LAST Selectivity of adsorption for the larger molecule in binary systems increases with an increase in the pore-network coordination number, as well with an increase in the mean pore width and in the spread of the pore-size distribution.

Keywords: Activated Carbons, Adsorbed Solution Theory, Adsorption, Comparison, Connectivity, Equation, Equilibrium, Gas-Mixtures, Ideal Adsorbed Solution Theory, Isotherm, Liquid-Phase Adsorption, Multicomponent, Nitrogen Sorption Measurements, Porous Solids, Prediction, Selectivity, Theory, Thermodynamics

Ko, D.C.K., Porter, J.F. and McKay, G. (2004), Multicomponent mass transport model for the sorption of metal ions on bone char. *AIChE Journal*, **50** (9), 2130-2141.

Full Text: [A\AIChE J50, 2130.pdf](A/AIChE%20J50,%202130.pdf)

Abstract: The sorption of binary mixtures of copper/cadmium and copper/zinc ions onto bone char was studied in fixed beds. The effects of solution flow rate, initial dye concentration, and bone char particle size range were investigated. A mass transport model based on film-surface diffusion and the IAS model for the equilibrium relationship was used to develop theoretical fixed-bed breakthrough curves. The model incorporates the Sips isotherm for the first time in fixed-bed predictions, since this isotherm gives an excellent correlation of the experimental equilibrium data. The model was used to determine the optimum surface diffusivities as 7.37×10-10 and 2.73×10-9 cm2/s for copper and cadmium in the Cu/Cd system; and 1.61×10-9 and 2.43×10-9 cm2/s for copper and zinc in the Cu/Zn system. (C) 2004 American Institute of Chemical Engineers.

Keywords: Fixed Bed, Adsorption, Copper, Cadmium, Zinc, Surface Diffusion, Fixed-Bed Sorption, Activated Carbon, Competitive Adsorption, Thermodynamics, Equilibria, Simulation, Systems

? Agrawal, A., Sahu, K.K. and Pandey B.D. (2004), A comparative adsorption study of copper on various industrial solid wastes. *AIChE Journal*, **50** (10), 2430-2438.

Full Text: [2004\AIChE J50, 2430.pdf](2004/AIChE%20J50,%202430.pdf)

Abstract: The adsorption behavior of Cu on three solid waste materials - sea nodule residue (SNR), fly ash (FA), and red mud (RM) - was investigated. The effects of various parameters, such as pH of the feed solution, contact time, temperature, adsorbate and adsorbent concentration, and particle size of the adsorbent, were studied for optimization of the process parameters. Adsorption of copper increased with increasing time, temperature, pH, and adsorbate concentration, and decreased with increasing initial copper concentration. The equilibrium data fit well with the Langmuir and Freundlich isotherms in the case of SNR, but not on RM and FA, because there was no appreciable effect of temperature on the metal removal on these two adsorbents. The adsorption of copper on SNR followed first-order kinetics involving the surface complex formation mechanism on the charged surface. Under the optimized conditions the adsorption capacity for copper was found to be 19.65 mg/g of SNR, 1.98 mg/g of FA, and 2.28 mg/g of RM. Thus the adsorption capacity of SNR was found to be more than that of activated carbon, thus making it suitable for the treatment of industrial effluents to reduce the level of copper within the permissible limits for its land disposal (3 mg/L) according to ISI guidelines. © 2004 American Institute of Chemical Engineers AIChE J 50: 2430-2438, 2004

Keywords: Adsorption, Copper, Sea Nodule Residue, Fly Ash, Red Mud

Lee, V.K.C., Porter, J.F., McKay, G. and Mathews, A.P. (2005), Application of solid-phase concentration-dependent HSDM to the acid dye adsorption system. *AIChE Journal*, **51** (1), 323-332.

Full Text: [2005\AIChE J51, 323.pdf](2005/AIChE%20J51,%20323.pdf)

Abstract: The fixed-bed adsorption of acid dyes onto granular activated carbon (Chemviron Filtrasorb 400) has been studied using a homogeneous surface diffusion model (HSDM). The model incorporates the external boundary layer mass transport and homogeneous diffusion inside the particle. A new orthogonal collocation method has been developed and used to solve the diffusion equations. This orthogonal collocation gives a faster solution method compared with the numerical Crank-Nicolson method. The surface diffusivity has been determined by an optimization procedure with minimization of sum of the error squared. The equilibrium relationship between the liquid-phase concentration and the solid-phase concentration has been described by the Redlich-Peterson isotherm. A solid-phase concentration-dependent surface diffusivity was introduced. The Darken model with the Redlich-Peterson isotherm was found to be a suitable correlation model for the adsorption of the acid dyes on carbon. The magnitude of the averaged D-s0 of each dye is in the order of AR114 > AB80 > AY117, which implies that, under the same solid-phase concentration gradient, the rate of mass transport diffusion is higher in AR114 than that in AB80 and AY117. This phenomenon may be explained by the different mobilities of the dye molecules present in the solution by the different arrangements of two sulfonic acid groups in the dye structures. (C) 2004 American Institute of Chemical Engineers.

Keywords: Surface Diffusion Model, Orthogonal Collocation, Adsorption, Acid Dyes, Activated Carbon, Activated Carbon, Surface-Diffusion, Mass-Transfer, Model, Bed, Sorption

Darda, P.J., Hogendoorn, J.A., Versteeg, G.F. and Souren, F. (2005), Reaction kinetics of polybutylene terephthalate polycondensation reaction. *AIChE Journal*, **51** (2), 622-630.

Full Text: [2005\AIChE J51, 622.pdf](2005/AIChE%20J51,%20622.pdf)

Abstract: The kinetics of the forward polycondensation reaction of polybutylene terephthalate (PBT) has been investigated using thermogravimetric analysis (TGA). PBT - prepolymer with an initial degree of polymerization of 5.5 was used as starting material. The PBT prepolymer was prepared from dimethyl terephthalate (DMT), and 1,4 - butanediol with 470 ppm wt (with respect to DMT) of tetrabutoxytitanate as catalyst. The process conditions in the TGA were such that the weight loss curves obtained from the TGA could be correlated uniquely and directly to the forward polycondensation reaction kinetics due to the absence of (1) mass transfer limitations in the removal of 1,4 butanediol from the melt, and (2) degradation reactions. It is shown that in the temperature range of 230-270degreesC, the forward polycondensation reaction can be expressed using second-order kinetics in terms of the hydroxyl end group concentration of the PBT polymer. (C) 2005 American Institute of Chemical Engineers.

Keywords: Kinetics, Polybutylene Terephthalate, Polycondensation, Thermogravimetry

? Galia, A., Abduljawad, M., Scialdone, O. and Filardo, G. (2006), A novel gas chromatographic method to measure sorption of dense gases into polymers. *AIChE Journal*, **52** (6), 2243-2253.

Full Text: [2006\AIChE J52, 2243.pdf](2006/AIChE%20J52,%202243.pdf)

Abstract: A novel experimental approach to determine the solubility, of gaseous compounds inside polymers is here described. The method is based on the gas chromatographic determination of the composition of the fluid phase at equilibrium with the polymer. To take into account the effect of the volume swelling on the measurement a suitable probe, nonabsorbable by the polymer, was added to the fluid phase. Under the adopted configuration the apparatus can operate up to 35 MPa and 80°C This experimental technique has been used to determine the solubility of carbon dioxide in poly(vinylidene fluoride) using argon as a probe. The latter was chosen because it is negligibly absorbed by the polymer and does not significantly alter the chemical potential of CO2. The uncertainty of the method in the determination of the solubility was estimated for each experimental points by error analysis. (c) 2006 American Institute of Chemical Engineers.

Keywords: Carbon-Dioxide, Diffusion-Coefficients, Elevated Pressures, High-Pressure, Nitrogen, Phase Equilibrium, Poly(Vinylidene Fluoride), Polyethylene, Polymer Processing, Polystyrene, Solubility, Sorption, Supercritical Fluids, Temperatures

? Mondal, P., Mohanty, B., Majumder, C.B. and Bhandari, N. (2009), Removal of arsenic from simulated groundwater by GAC-Fe: A modeling approach. *Aiche Journal*, **55** (7), 1860-1871.

Full Text: [2009\Aic J55, 1860.pdf](2009/Aic%20J55,%201860.pdf)

Abstract: A study on kinetics and equilibrium is presented on the adsorption of arsenic species from simulated groundwater containing arsenic (As(III):As(V)::1:1), Fe and Mn in concentrations of 0.188 mg/L, 2.8 mg/L and 0.6 mg/L, respectively, by iron impregnated granular activated charcoal (GAC-Fe). Also presented is the interaction effect of As, Fe and Mn on the removal of arsenic species from water, Which simulates contaminated groundwater. Among conventional models, pseudo second-order kinetic model and Freundlich isotherm were adequate to explain the kinetics and equilibrium of adsorption process, respectively. However, in comparison to conventional isotherm empirical polynomial isotherm provided a more accurate prediction on equilibrium specific uptakes of arsenic species. Effects of initial concentrations of As, Fe and Mn on the removal of total arsenic (As(T)), As(V) & As(III) have been correlated within the error limit of -0.2 to +5.64%. (C) 2009 American Institute of Chemical Engineers AIChE J, 55: 1860-1871, 2009.

Keywords: Activated Charcoal, Adsorbents, Adsorption, Adsorptive Removal, Arsenic, Arsenic Species, As(III), As(V), Comparison, Contaminated Groundwater, Contaminated Water, Conventional, Elovich Equation, Equilibrium, Error, Freundlich, Freundlich Isotherm, GAC-Fe, Groundwater, Husk Carbon, Impregnated Activated Carbon, Interaction, Interaction Effect, Iron, Isotherm, Kinetic, Kinetic Model, Kinetics, Manganese, Metal Sorption, Model, Modeling, Models, Prediction, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Removal, Second Order, Second-Order, Species, Water

? He, Y.F., Zhu, X.F., Li, Q.M. and Yang, W.S. (2009), Perovskite oxide absorbents for oxygen separation. *AIChE Journal*, **55** (12), 3125-3133.

Full Text: [2009\Aic J55, 3125.pdf](2009/Aic%20J55,%203125.pdf)

Abstract: The fixed-bed oxygen absorption processes of the series of Ba1-xSrxCo0.8Fe0.2O3-delta oxides were studied by oxygen partial pressure swing absorption in the temperature range of 300-850°C. The results show that Ba1-xSrxCo0.8Fe0.2O3-delta, with the smallest A-site ion radius, has the largest oxygen absorption capacity (0.402 mmol/g) at 500°C. The oxygen absorption and desorption kinetics fit well with the pseudo-second-order kinetics model. Comparing the modeling absorption rate coefficient k(2) with the desorption rate coefficient k(2)’, all the oxides studied had higher oxygen absorption rates than oxygen desorption ones. In addition, the combined results of X-ray diffraction analysis, O-2-TPD, room temperature iodometric titration, and thermogravimetric analysis explained the relationship between the oxygen absorption capacities and the average radii of the A-site ions for this series of Ba1-xSrxCo0.8Fe0.2O3-delta in the temperature range of 300-600ºC. (C) 2009 American Institute of Chemical Engineers AIChE J, 55: 3125-3133, 2009.

Keywords: A-Site, Absorption, Adsorption, Air Separation, Analysis, Ba1-XSrxCO0.8Fe0.2O3-Delta, Capacity, Dense Ceramic Membranes, Desorption, Desorption Kinetics, Equilibrium, Fixed Bed, High-Temperature, Ionic Radius, Ions, Kinetics, Kinetics Model, Lanthanum Cobaltite Perovskite, Model, Modeling, Oxides, Oxygen, Oxygen Absorption, Desorption, Permeation Properties, Perovskite Oxides, Pressure, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Rates, Room Temperature, Separation, Sorptive Properties, Stability, Temperature, X-Ray, X-Ray Diffraction

? Oubagaranadin, J.U.K. and Murthy, Z.V.P. (2010), Characterization and use of acid-activated montmorillonite-illite type of clay for Lead(II) removal. *AIChE Journal*, **56** (9), 2312-2322.

Full Text: [2010\Aiche J56, 2312.pdf](2010/Aiche%20J56,%202312.pdf)

Abstract: The natural local deposits of montmorillonite-illite type of clay (MIC) were susceptible for acid activation. Raw clay was taken for experimentation, disintegrated on acid activation with sulfuric acid, which showed a particle size distribution. The montmorillonite and illite phases in the raw clay disappeared on acid activation and the activated clay, MIC(AA), showed with sodium-aluminum-silicate and beidellite phases apart from quartz (low) phase. The raw and acid-activated clays were characterized using X-ray powder diffractometry, X-ray fluorescence, Fourier transform infrared spectrometry, and energy dispersive X-ray, and their adsorption capacities were compared. When tested for adsorption of Pb(II) in aqueous solutions, the acid-activated clay showed about 50% increased adsorption than raw clay. Sips adsorption isotherm and pseudo-second-order kinetic models were found to be best for the batch adsorption data. Kinetic studies showed the existence of film diffusion and intraparticle diffusion. A two-stage batch adsorber was designed for the removal of Pb(II) from aqueous solutions. (C) 2010 American Institute of Chemical Engineers AIChE J, 56: 2312-2322, 2010.

Keywords: Acid Activated Clay, Acid Activation, Acid-Activation, Activated Clay, Activation, Adsorbents, Adsorption, Adsorption Behavior, Adsorption Capacities, Adsorption Isotherm, Aqueous Solutions, Aqueous-Solutions, Batch, Batch Adsorption, Bentonite, Characterization, China-Clay, Clay, Clays, Data, Diffusion, Distribution, Dye, Energy, Film Diffusion, Fluorescence, Illite, Intraparticle Diffusion, Isotherm, Isotherm Models, Kinetic, Kinetic Models, Kinetic Studies, Kinetics, Lead, Lead(II), Local, Models, Montmorillonite, Natural, Particle Size, Particle Size Distribution, Pb(II), Peat, Pseudo Second Order, Pseudo-Second-Order, Quartz, Removal, Size, Solutions, Sorption, Spectrometry, Two Stage Batch Adsorber, X-Ray

? Esparza, P., Borges, M.E., Díaz, L., Alvarez-Galván, M.C. and Fierro, J.L.G. (2011), Equilibrium and kinetics of adsorption of methylene blue on Ti-modified volcanic ashes. *AIChE Journal*, **57** (3), 819-825.

Full Text: [2011\AIChE J57, 819.pdf](2011/AIChE%20J57,%20819.pdf)

Abstract: Volcanic ashes (VAs) and Ti-modified volcanic ashes (TVA) were investigated as inexpensive adsorbents to remove methylene blue (MB) from aqueous solutions. TVA displayed higher and faster MB adsorption than VA. Adsorption studies were carried out in a batch system at room temperature. In this work, several variables were studied: contact time, pH, initial MB concentration, and adsorbent dosage. The equilibrium data of MB adsorption were analyzed according to the Langmuir and Freundlich adsorption isotherm models. Optimum adsorption performance for TVAs particles, prepared using a hydrothermal method, was obtained at pH = 10 and 3 g/l adsorbent dose. MB adsorption isotherm data can be described satisfactorily by the Langmuir equation, whereas adsorption kinetic data fit a pseudo second-order kinetics model. (C) 2010 American Institute of Chemical Engineers AIChE J, 57: 819-825, 2011.

Keywords: Acid Dyes, Activated Carbon, Adsorption Isotherm, Aqueous-Solution, Dye Adsorption, Dyes, Fly-Ash, Kinetic Model, Mechanism, Methylene Blue, Nanomaterials, Neutral Red, Process Design, Removal, Rice-Husk, Volcanic Ashes

# Title: AIChE Symposium Series

(AIChE Symposium Series)

Title: Adsorption and Ion Exchange – Progrogress and Future Prospects

Full Journal Title: AIChE Symposium Series

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? Yon, C.M.and Turnock, P.H. (1971), ??. in *Adsorption and Ion Exchange – Progrogress and Future Prospects*, (Edited by Sherman, J. and Vermeulen, T.), American Institute of Chemical Engineers, AIChE Symposium Series, **67** (17), 75-??.

Helfferich, F.G. (1984), Conceptual view of column behavior in multicomponent adsorption or ion-exchange systems. in *Adsorption and Ion Exchange – Progrogress and Future Prospects*, (Edited by Sherman, J. and Vermeulen, T.), American Institute of Chemical Engineers, AIChE Symposium Series, **233** (80), 1-13.

Klein, G., Massiri, M. and Vislocky, J.M. (1984), Multicomponet fix-bed sorption with variable initial and feed compositions: Computer prediction of local-equilibrium. in *Adsorption and Ion Exchange – Progrogress and Future Prospects*, (Edited by Sherman, J. and Vermeulen, T.), American Institute of Chemical Engineers, AIChE Symposium Series, **233** (80), 14-20.

# Title: AIDS

Full Journal Title: AIDS

ISO Abbreviated Title: AIDS

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Subject Categories:

: Impact Factor

? Wyatt, C.A., Malvestutto, C., Coca, S.G., Klotman, P.E. and Parikh, C.R. (2008), The impact of hepatitis C virus coinfection on HIV-related kidney disease: A systematic review and meta-analysis. *AIDS*, **22** (14), 1799-1807.

Full Text: [2008\AIDS22, 1799.pdf](2008/AIDS22,%201799.pdf)

Abstract: Background: In the era of antiretroviral therapy, non-AIDS complications such as kidney disease are important contributors to morbidity and mortality. Objective: To estimate the impact of hepatitis C coinfection on the risk of kidney disease in HIV patients. Design and methods: Two investigators identified English-language citations in MEDLINE and Web of Science from 1989 through 1 July 2007. References of selected articles were reviewed. Observational studies and clinical trials of HIV-related kidney disease and antiretroviral nephrotoxicity were eligible if they included at least 50 subjects and reported hepatitis C status. Data on study characteristics, population, and kidney disease Outcomes were abstracted by two independent reviewers. Results: After screening 251 6 articles, 27 studies were eligible and 24 authors confirmed or provided data. Separate meta-analyses were performed for chronic kidney disease outcomes (n=10), proteinuria (n=4), acute renal failure (n=2), and indinavir toxicity (n=5). The pooled incidence of chronic kidney disease was higher in patients with hepatitis C coinfection [6.2 versus 4.01%; relative risk 1.49, 95% confidence interval (CI) 1.08-2.06]. in meta-regression, prevalence of black race and the proportion of patients with documented hepatitis C status were independently associated with the risk of chronic kidney disease. The relative risk associated with hepatitis C coinfection was significantly increased for proteinuria (1.15; 95% CI 1.02-1.30) and acute renal failure (1.64; 95% CI 1.21-2.23), with no significant statistical heterogeneity. The relative risk of indinavir toxicity was 1.59 (95%) CI 0.99-2.54) with hepatitis C coinfection. Conclusion: Hepatitis C coinfection is associated with a significant increase in the risk of HIV-related kidney disease. (C) 2008 Wolters Kluwer Health vertical bar Lippincott Williams &Wilkins.

Keywords: Active Antiretroviral Therapy, Antiretroviral, Antiretroviral Therapy, Authors, Chronic Kidney Disease, Citations, Clinical Trials, Cohort, Diabetes-Mellitus, Disease, Failure, Health, Hepatitis, Hepatitis C, Hepatitis Coinfection, HIV, HIV-1-Infected Patients, Impact, Infected Patients, Kidney Disease, Medline, Meta-Analysis, Morbidity, Mortality, Nephrotoxicity, Outcomes, Prevalence, Proteinuria, Race, References, Relative Risk, Review, Risk, Risk-Factors, Science, Screening, Stage Renal-Disease, Statistical, Systematic, Systematic Review, Therapy, Toxicity, United-States, Web of Science

# Title: AIDS and Behavior

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: Impact Factor

? Mccoy, S.I., Kangwende, R.A. and Padian, N.S. (2010), Behavior change interventions to prevent HIV infection among women living in low and middle income countries: A systematic review. *AIDS and Behavior*, **14** (3), 469-482.

Abstract: We conducted a systematic review of behavioral change interventions to prevent the sexual transmission of HIV among women and girls living in low- and middle-income countries. PubMed/MEDLINE, Web of Science, the Cochrane Library, and other databases and bibliographies were systematically searched for trials using randomized or quasi-experimental designs to evaluate behavioral interventions with HIV infection as an outcome. We identified 11 analyses for inclusion reporting on eight unique interventions. Interventions varied widely in intensity, duration, and delivery as well as by target population. Only two analyses showed a significant protective effect on HIV incidence among women and only three of ten analyses that measured behavioral outcomes reduced any measure of HIV-related risk behavior. Ongoing research is needed to determine whether behavior change interventions can be incorporated as independent efficacious components in HIV prevention packages for women or simply as complements to biomedical prevention strategies.

Keywords: Behavioral Interventions, Biomedical, Cochrane, Condom Use, Databases, Health Intervention, HIV, HIV, AIDS Prevention, Infection, Interventions, Low- and Middle-Income Countries, Outcome, Outcomes, Prevention, Randomized-Controlled-Trial, Research, Review, Risk, Risk Behavior, Rural South-Africa, Science, Sex Workers, Sexually-Transmitted-Diseases, Stepping Stones, Systematic, Systematic Review, Transmission Dynamics, United-States, Web of Science, Women

# Title: AIDS Care-Psychological and Socio-Medical Aspects of AIDS/HIV

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Health Policy & Services: Impact Factor 0.942, / (2000); Impact Factor 1.123, 14/68 (2001)

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Psychology, Multidisciplinary: Impact Factor 0.942, / (2000); Impact Factor 1.123, 28/68 (2001)

Social Sciences, Biomedical: Impact Factor 0.942, / (2000); Impact Factor 1.123, 7/68 (2001)

Heckman, T.G., Somlai, A.M., Peters, J., Walker, J., OttoSalaj, L., Galdabini, C.A. and Kelly, J.A. (1998), Barriers to care among persons living with HIV/AIDS in urban and rural areas. *AIDS Care-Psychological and Socio-Medical Aspects of AIDS/HIV*, **10** (3), 365-375.

Full Text: [A\AIDS Care10, 365.pdf](A/AIDS%20Care10,%20365.pdf)

Abstract: People living with HIV disease, particularly those in small towns and rural areas, face many barriers that prevent them from receiving important life-care services. We developed the Barriers to Care Scale (BACS) to delineate the problem severity of factors that impede care and service provision among a sample of 226 men and women living with HIV disease in a single midwestern state. Both urban and rural respondents indicated that barriers to life-care services included the lack of knowledge about HIV among citizens in the community, insufficient personal supportive and financial resources, the lack of employment opportunities for people living with HIV, and the lack of supportive and understanding work environments. Rural persons living with HIV disease, compared to their urban counterparts, assigned significantly higher problem severity ratings to the following barriers: the need to travel long distances to medical facilities and personnel; a shortage adequately trained medical and mental health professionals; a lack of personal or public transportation; and community residents’ stigma towards people living with HIV. The large number of barriers to care identified in the present study indicates that innovative programmes designed to remove these barriers and improve the life quality of rural persons living with HIV are urgently needed.

Keywords: HIV-Infection

? Frankis, J. and Flowers, P. (2005), Men who have sex with men (MSM) in public sex environments (PSEs): A systematic review of quantitative literature. *AIDS Care-Psychological and Socio-Medical Aspects of AIDS/HIV*, **17** (3), 273-288.

Full Text: [2005\AIDS Care17, 273.pdf](2005/AIDS%20Care17,%20273.pdf)

Abstract: We systematically review quantitative research relating to the sexual behaviours of MSM in PSEs. We examine the methodological rigour of these studies to determine an appropriate framework for future PSE-based research and quantify sexual behavioural trends therein. Medline, BIDS, Web of Science and recent HIV/AIDS conferences were searched according to a systematic inclusion criteria. Nine papers were included for review. Recruitment of participants’ outwith PSE settings, and low response rates (6%) of participants contacted in situ, question the validity and generalizability of current evidence. Most PSE users were gay or bisexually identified and half of men in the gay community reported recent PSE use. Around 10% of men reported casual status-unknown/serodiscordant unprotected anal intercourse (UAI) within PSEs. HIV testing rates amongst PSE users were similar to the wider gay community, though the proportion of men who tested positive was twice as high. Rates of casual UAI suggest that PSEs represent important sites for HIV prevention. However, since extant evidence is scant and methodologically flawed, further research is urgent. Such work must recruit participants in situ, and obtain satisfactory response rates, to be generalizable to the wider population of men who cruise.

Keywords: Anonymous Sex, Behavior, Bisexual Men, Gay Men, Hepatitis-A, Highway Rest Area, HIV, HIV Risk, HIV, AIDS, Homosexually Active Men, Literature, Papers, Prevention, Quantitative, Quantitative Research, Research, Review, San-Francisco, Science, Syphilis, Systematic, Systematic Review, Trends, Validity, Web of Science

? Wright, N.M.J. and Walker, J. (2006), Homelessness and drug use - A narrative systematic review of interventions to promote sexual health. *AIDS Care-Psychological and Socio-Medical Aspects of AIDS/HIV*, **18** (5), 467-478.

Full Text: [2006\AIDS Care18, 467.pdf](2006/AIDS%20Care18,%20467.pdf)

Abstract: The objective of this research project was to examine the effectiveness of sexual health promotion interventions in homeless drug using populations. The following databases were searched: Medline (1966 to 2003), EMBASE (1980 to 2003), psycinfo (1985 to 2003), CINAHL (1982 to 2003), web of Science (1981 to 2003) and the Cochrane Library (Evidence Based health). Two independent researchers selected studies for inclusion. Inclusion criteria covered longitudinal studies using comparative statistics examining interventions to promote sexual health amongst homeless drug users. Studies excluding drug users from the study sample or where no mention was made of housing status were excluded. A narrative analysis of the papers was adopted to elicit common themes emerging from the studies. of 99 papers identified, only 6 fulfilled the inclusion criteria. Interventions which seek to effect attitudinal and behavioural change through interactive methods such as role-play, video games and group work led to a self-reported reduction in both risk from drugs and sexual activity. The evidence for maintenance of risk reduction over one year remains unclear. Interventions do not appear to promote risky sexual activity in previously sexually inactive participants.

Keywords: Aids, Analysis, Cochrane, Databases, Drug, Drug Use, Education, Effectiveness, Embase, Games, Group Work, Health Promotion, Human-Immunodeficiency-Virus, Interventions, Longitudinal Studies, Men, Papers, People, Program, Promotion, Provision, Reduction, Research, Researchers, Review, Risk, Risk Behaviors, Risk Reduction, Science, Statistics, Systematic, Systematic Review, Women

? Beard, J., Feeley, F. and Rosen, S. (2009), Economic and quality of life outcomes of antiretroviral therapy for HIV/AIDS in developing countries: A systematic literature review. *AIDS Care-Psychological and Socio-Medical Aspects of AIDS/HIV*, **21** (11), 1343-1356.

Full Text: [2009\AIDS Care21, 1343.pdf](2009/AIDS%20Care21,%201343.pdf)

Abstract: The impacts of antiretroviral therapy (ART) on quality of life, mental health, labor productivity, and economic wellbeing for people living with HIV/AIDS in developing countries are only beginning to be measured. We conducted a systematic literature review to analyze the effect of ART on these economic and quality of life indicators in developing countries and assess the state of research on these topics. We searched Ovid/Medline, PubMed, Psych Info, Web of Science, Google Scholar, and the abstract database of the International AIDS Society Conference and the Conference on Retroviruses and Opportunistic Infections. Both qualitative and quantitative studies were included, as were peer-reviewed articles, gray literature, and conference abstracts and presentations. Findings are reported from 21 publications, including 14 full-length articles, six abstracts, and one presentation (representing 16 studies). Compared to HIV-positive patients not yet on treatment, patients on ART reported significant improvements in physical, emotional and mental health, and daily function. Work performance improved and absenteeism decreased, with the most dramatic changes occurring in the first three months of treatment and then leveling off. Little research has been done on the impact of ART on household wellbeing, with modest changes in child and family wellbeing within households where adults are receiving ART reported so far. Most studies from developing countries have not yet assessed economic and quality of life outcomes of therapy beyond the first year; therefore, longitudinal outcomes are still unknown. Findings were limited geographically, with an emphasis on sub-Saharan Africa and adult treatment. As ART roll out extends throughout high HIV prevalence, low-resource countries and is sustained over years and decades, research on pediatric and differential gender economic and quality of life outcomes will become increasingly urgent, as will systematic evaluation of ART programs.

Keywords: Absenteeism, Adult, Adults, Adverse Events, Africa, AID, AIDS, Antiretroviral, Antiretroviral Therapy, Art, Child, Conference, Developing Countries, Evaluation, Gender, Google Scholar, Haart, HIV, HIV-Infected Adults, HIV, AIDS, Household Wellbeing, Impact, Individuals, Labor Productivity, Literature, Literature Review, Mental Health, Outcomes, Pediatric, Performance, Prevalence, Program, Publications, Pubmed, Quality of Life, Quantitative, Research, Review, Risk Behavior, Science, South-Africa, Sub-Saharan Africa, Systematic, Systematic Literature Review, Therapy, Topics, Treatment, Web of Science

# Title: AIDS Patient Care and STDs

Full Journal Title: [AIDS Patient Care and STDs](http://www.liebertonline.com/toc/apc/2005/19/1)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1087-2914

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Olfson, E. and Laurence, J. (2005), Accessibility and longevity of Internet citations in a clinical AIDS journal. *AIDS Patient Care and STDs*, **19** (1), 5-8.

Abstract: Little is known about the accessibility and longevity of Internet references in medical and scientific journals. This is particularly problematic in the ever changing field of HIV/AIDS. We examined all issues of AIDS Patient Care and STDs between 2001 and 2004 to test the use and accessibility of Internet citations during this period. The results were compared to findings from a similar evaluation by Hester and collagues in 2004 of oncology journals. We found that Internet referencing increased from a mean of 0.7% (range, 0.0% - 2.1%) of all citations in 2001 to a mean of 3.5% (range, 0.0% - 11.2%) in 2004. As the period of time increased from an article’s publication, the proportion of inactive Internet references increased (21.3% [1 year] to 41.7% [4 years]). These findings demonstrate the need to adapt new citation policies to facilitate the accessibility of referenced Internet information.

Keywords: AID, AIDS, Citation, Citations, Clinical, Evaluation, Field, Information, Internet, Journal, Journals, Medical, Oncology, Policies, Publication, Referencing, Scientific Journals

# Title: AIDS Research and Human Retroviruses

Full Journal Title: AIDS Research and Human Retroviruses

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Falagas, M.E., Bliziotis, I.A., Kondilis, B. and Soteriades, E.S. (2006), Eighteen years of research on AIDS: Contribution of and collaborations between different world regions. *AIDS Research and Human Retroviruses*, **22** (12), 1199-1205.

Full Text: [2006\AID Res Hum Ret22, 1199.pdf](2006/AID%20Res%20Hum%20Ret22,%201199.pdf)

Abstract: The scientific community invests significant resources on HIV/AIDS research to confront the current epidemic. We reviewed the medical literature in order to evaluate the contribution of different world regions on HIV/AIDS research during the past 18 years. We retrieved articles, using an elaborate methodology, from three journals focusing on HIV/AIDS between 1986 and 2003, indexed in the Journal Citation Reports (JCR) and the Web of Science databases of the Institute for Scientific Information (ISI). Comparisons were made by dividing the world into nine geographic regions, and by using the human development index (HDI) categorization. A total of 9502 articles on HIV/AIDS were retrieved from three AIDS journals over an 18-year study period. The United States and Western Europe together and five developed out of nine world regions made up a striking 83% and 92% of the world’s research production on HIV/AIDS, respectively. Scientists from the developing world participated in 10.4% of the articles published during 1986-1991, 14.7% during 1992-1997, and 21.3% during 1998-2003. Researchers from countries included in the high, medium, and low HDI category produced 2240, 9, and 15 articles per billion population, respectively. About half of articles originating in Latin America and the Caribbean and half in Asia were produced in collaboration with the United States. However, 40% of articles from Africa and 58% from Eastern Europe were produced in cooperation with Western Europe. Collaboration between researchers within developing regions was negligible. The vast majority of the world’s research on AIDS is produced in the developed world. Although research production was minimal in the developing world, we found that regions included in the low and medium HDI categories showed a higher proportion of increase in research productivity than the developed countries. International collaborations should significantly increase and expand beyond the traditional cultural and political lines of international relationships.

Keywords: Adult Mortality, Africa, Aid, Aids, Asia, Challenges, Citation, Collaboration, Contribution, Databases, Development, Epidemic, Europe, HIV, HIV, AIDS, Human, Impact, ISI, Journal, Journal Citation Reports, Journals, Latin America, Literature, Medical, Methodology, Research, Research Production, Research Productivity, Researchers, Science, Scientific Information, Thailand, Traditional, Web of Science

# Title: AIDS Reviews

Full Journal Title: AIDS Reviews

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bravo, P., Edwards, A., Rollnick, S. and Elwyn, G. (2010), Tough decisions faced by people living with HIV: A literature review of psychosocial problems. *AIDS Reviews*, **12** (2), 76-88.

Full Text: [2010\AID Rev12, 76.pdf](2010/AID%20Rev12,%2076.pdf)

Abstract: People living with HIV have faced a new situation since the arrival of the antiretroviral treatments. HIV has become a long-term condition, which not only affects physical health, but also causes psychological and social problems because of stigma and discrimination. These challenges present many decisions and dilemmas for people living with HIV, which involve complex emotional and psychological issues. The aim of this study was to examine the psychosocial decision needs of people living with HIV. To undertake the literature review, a search strategy was designed. Sources included databases (Web of Science, Scopus, ProQuest, and PubMed) as well as electronic journals (AIDS and Behavior, AIDS Care, and Social Science and Medicine). The following search terms were used: (HIV) AND (decision making; OR decision need; OR decision) AND (psychosocial; OR psychological; OR social). All languages were included, using articles from 1990 to 2009. The search was conducted from September 2008 to November 2009, and identified 123 articles. After analysis, 46 articles were included for detailed assessment. The results show that people living with HIV face three key decisions: (i) whether or not to disclose their diagnosis to others; (II) decisions about adherence to treatments; and (iii) decisions about sexual activity and desires about parenthood. Problems associated with these decisions often result in isolation and mental illness such as depression and anxiety, lack of access to social support, and refusal to seek treatment. Despite the importance of HIV and its public health impact, few studies have considered the psychosocial needs of people living with HIV, but the results demonstrated the burden as a consequence of those needs and that greater support would be of benefit to face them in an effective way. Therefore, the results of this review highlight the requirement to develop interventions to support the psychosocial needs of people living with HIV, to accurately reflect the views and needs of the target users. (AIDS Rev. 2010;12:76-88).

Keywords: Adherence, AID, AIDS, Analysis, Antiretroviral, Anxiety, Assessment, Burden, Care, Databases, Decision Making, Decision Needs, Decision-Making, Depression, Depression and Anxiety, Diagnosis, Disclosure Process, Discrimination, Face, Health Impact, Health-Care Providers, HIV, HIV, AIDS, Impact, Infected Women, Interventions, Journals, Literature, Literature Review, Medication Adherence, Men, People Living with HIV, Positive Women, Psychosocial, Public Health, Pubmed, Reproductive Health, Review, Science, Scopus, Serodiscordant Couples, Serostatus Disclosure, Sexual Behavior, Social, Sources, South-Africa, Strategy, Treatment, Web of Science

# Title: AIDS Weekly

Full Journal Title: AIDS Weekly

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

(2003), Report discusses lessons learned from China crisis. *AIDS Weekly*, **May**, 30.

Full Text: [A\AIDS Weekly, May, 30.pdf](A/AIDS%20Weekly,%20May,%2030.pdf)

# Title: AIHA Journal

Full Journal Title: AIHA Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Lodewyckx, P. and Vansant, E.F. (1999), Influence of humidity on adsorption capacity from the Wheeler-Jonas model for prediction of breakthrough times of water immiscible organic vapors on activated carbon beds. *AIHA Journal*, **60** (5), 612-617.

Full Text: [A\AIHA J61, 612.pdf](A/AIHA%20J61,%20612.pdf)

Abstract: The Wheeler-Jonas model is well known for its good prediction of breakthrough times for organic vapors on activated carbon beds. However, in its original form it is only valid under dry conditions: no prewetting of the filter and no humidity in the ambient air during use. The main parameter in the Wheeler-Jonas equation is the adsorption capacity, We. By measuring over 200 breakthrough times, with 7 different vapors on 3 different types of activated carbon, a satisfactory model for the influence of moisture on We was established. The only supplementary information needed, compared with the application of the Wheeler-Jonas equation under dry circumstances, is the water isotherm of the activated carbon.

Keywords: Organic Vapors, Respirators, Adsorption, Humidity, Model

Lodewyckx, P. and Vansant, E.F. (2000), The influence of humidity on the overall mass transfer coefficient of the Wheeler-Jonas equation. *AIHA Journal*, **61** (4), 461-468.

Full Text: [A\AIHA J61, 461.pdf](A/AIHA%20J61,%20461.pdf)

Abstract: The Wheeler-Jonas model is well known for its good prediction of breakthrough times for organic vapors on activated carbon beds. However, it is valid only in dry conditions: no prewetting of the filter and no humidity in the ambient air during use. One of the parameters that is likely to be influenced is the overall mass transfer coefficient kv. By measuring over 200 breakthrough times, with 7 different vapors on 4 different types of activated carbon, a simple but satisfactory model for the influence of moisture on kv was established. The only items of information needed, compared with the application of the Wheeler-Jonas equation under dry circumstances, are the water isotherm and the total pore volume of the activated carbon.

Keywords: Adsorption, Humidity, Model, Organic Vapors, Respirators

# Title: Aktuelle Neurologie

Full Journal Title: Aktuelle Neurologie

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language: English

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mache, S., Tropp, S., Vitzthum, K., Kusma, B., Scutaru, C., Quarcoo, D., Klapp, B.F. and Groneberg, D.A. (2010), Alzheimer’s disease - A scientometric analysis and data acquisition. *Aktuelle Neurologie*, **37** (5), 206-212.

Full Text: [2010\Akt Neu37, 206.pdf](2010/Akt%20Neu37,%20206.pdf)

Abstract: Background Research activities on Alzheimer’s disease have increased enormously recently. A differentiation between publications of major and minor importance has become difficult even for experts. Scientometric data on developments and tendencies in Alzheimer’s disease research were not available to date. The aim of this study was to evaluate the scientific efforts in Alzheimer’s disease research. Methods Large-scale data analyses, density-equalising algorithms and scientometric methods were used to evaluate the quantity and quality of research achievements of scientists studying Alzheimer’s disease. Density-equalising algorithms were applied to data retrieved from ISI-Web. Results From 1985 to 2008, 50030 publications on Alzheimer’s disease were published and included in the database. Approximately 97% of the articles were written in English. The USA was identified as the most prolific country during that period, Canada and the UK were the most important cooperation partners followed by Germany and France, as well as other industrialised countries such as Japan and Australia. Conclusion Our results indicate an increase in research activities after 1990 which can be explained by some important research results and an increasing importance in the media. The study results imply that currently established measures of research output (i.e., impact factor, h-index) should be evaluated critically because trends, such as self-citation and co-authorship, distort the results and limit their suitability as measures of research quality.

Keywords: Alzheimer’s Disease, Data Acquisition, Dementia, Index, Prevalence, Scientometric Analysis

# Title: Alaska Medicine

Full Journal Title: Alaska Medicine

ISO Abbreviated Title:

JCR Abbreviated Title: Alaska Med

ISSN: 0002-4538 (Print)

Issues/Year:

Journal Country/Territory: United States

Language: English

Publisher: Alaska State Medical Association

Publisher Address:

Subject Categories:

: Impact Factor

? Mahoney, M.C. and Michalek, A.M. (1995), A bibliometric analysis of cancer among American Indians & Alaska Natives, 1966-1993. *Alaska Medicine*, **37** (2), 59-62, 77.

Abstract: A bibliometric analysis was employed to objectively assess scientific studies published between 1966 and 1993 which have described cancer among American Indians and Alaska Natives. Searches of the MEDLINE (1966-1993) and CANCERLIT data bases (1983-1994) were used to identify relevant publications. In addition to examining publication sources and quantitative temporal trends, further bibliometric analyses were completed by considering a subset of papers published between 1982 and 1992. A total of 128 studies of cancer among American Indians and Alaska Natives were published between 1966 and 1993; 62 of these articles (48%) appeared between 1988 and 1993. Nine journals accounted for 53% of the total publications. The subset of 68 papers published between 1982 and 1992 were cited a total of 388 times in 136 different journals; the median number of citations was 2. Results demonstrate a limited number of published papers on cancer among American Indians and Alaska Natives. It is hoped that this paper will increase the awareness of cancer as an important health problem among American Indian and Alaska Natives and thereby serve to stimulate additional cancer-related research activities involving these groups.

Keywords: Alaska, Analyses, Analysis, Bibliometric, Bibliometric Analyses, Bibliometric Analysis, Cancer, Citations, Data, Health, Journals, MEDLINE, Papers, Publication, Publications, Research, Sources, Temporal, Trends

# Title: Albion

Full Journal Title: Albion

ISO Abbreviated Title: Albion

JCR Abbreviated Title: Albion

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Madison, K.G. (1977), The troglodyte connection: A case of self-plagiarism. *Albion*, **9** (2), 188-192.

Full Text: [1960-80\Albion9, 188.pdf](1960-80/Albion9,%20188.pdf)

? Lander, J.R. (1977), The troglodyte connection: A case of self-plagiarism - Reply. *Albion*, **9** (2), 193-194.

Full Text: [1960-80\Albion9, 188.pdf](1960-80/Albion9,%20188.pdf)

# Title: Alcohol and Alcoholism

Full Journal Title: [Alcohol and Alcoholism](http://alcalc.oupjournals.org/)

ISO Abbreviated Title: Alcohol Alcohol.

JCR Abbreviated Title: Alcohol Alcoholism

ISSN: 0735-0414

Issues/Year: 6

Journal Country/Territory: England

Language: English

Publisher: Oxford Univ Press

Publisher Address: Great Clarendon st, Oxford OX2 6DP, England

Subject Categories:

Substance Abuse: Impact Factor 1.753, 4/9 (2001)

Petridou, E., Trichopoulos, D., Sotiriou, A., Athanasselis, S., Kouri, N., Dessypris, N., Dounis, E. and Koutselinis, A. (1998), Relative and population attributable risk of traffic injuries in relation to blood-alcohol levels in a Mediterranean country. *Alcohol and Alcoholism*, **33** (5), 502-508.

Full Text: [A\Alc Alc33, 502.pdf](A/Alc%20Alc33,%20502.pdf)

Abstract: Blood samples were taken from, and interviews were conducted with, 76 persons injured in motor vehicle crashes, and from 126 controls with a home and leisure injury. The analysis was undertaken by modelling the data through conditional logistic regression, controlling for gender- and age-matched variables and other potentially confounding variables, including education and visual acuity. Detectable alcohol levels were associated with a 4.9 relative risk (95% confidence intervals 1.4 to 16.8). The population attributable fraction was about 10% with wide confidence intervals. There was no evidence for a safe threshold in these data. The increased injury risk associated with detectable blood-alcohol levels was disproportionally, albeit non-significantly, elevated among occasional drinkers in comparison to regular drinkers. We conclude that alcohol intake is an important cause of road traffic injuries even in the context of the Mediterranean countries where alcohol is taken in moderation and mainly in the form of wine during meals.

Keywords: Drinking Drivers, Trauma, Impairment, Behavior, Score

Jones, A. (1999), Invited special article. The impact of *Alcohol and Alcoholism* among substance abuse journals. *Alcohol and Alcoholism*, **34** (1), 25-34.

Full Text: [1999\Alc Alc34, 25.pdf](1999/Alc%20Alc34,%2025.pdf)

Abstract: This article concerns the question of journal impact factor and other bibliometric indicators made available by the Institute for Scientific Information in their Journal Citation Report for 1996. The impact factors of journals within the subject category ‘substance abuse’ are listed along with total citations, immediacy indices, and cited half-lives. The relationship between cited and citing journals is discussed with the main focus on the data available for *Alcohol and Alcoholism*. Some of the problems and limitations of bibliometric measures of productivity are dealt with, especially when these are used to evaluate the work of individual scientists. Although bibliometric measures are easy to compute, they become difficult to interpret, such as when dealing with collaborative research and the problem posed by multiple authorship. The need to adjust impact factors and citation counts for the number of co-authors in a paper becomes important when credit has to be attributed to one individual from a multi-author paper. This is often necessary in connection with grant applications and when making decisions about academic promotion and tenure. The impact factor of *Alcohol and Alcoholism* has increased steadily over the past 5 years, even after adjusting for the number of self-citations, which resulted in an even greater increase in impact. However, the impact factors of substance abuse journals are generally low, compared with disciplines such as immunology, genetics, and biochemistry. Some suggestions are made for increasing the impact factors of substance abuse journals if this is considered necessary. But instead of paying attention to the impact factor of a journal, scientists should give more consideration to the speed and efficiency of the editorial handling of their manuscripts and particularly to the quality and timeliness of the peer review.

? Rajendram, R., Lewison, G. and Preedy, V. (2006), Worldwide Alcohol-related research and the disease burden. *Alcohol and Alcoholism*, **41** (1), 99-106.

Full Text: [2006\Alc Alc41, 99.pdf](2006/Alc%20Alc41,%2099.pdf)

Abstract: Aims: The purpose of this study was to determine the international commitment to alcohol-related research relative to its global burden of disease, which is 4% of disability adjusted life years (DALYs). Methods: The worldwide literature indexed in the Science Citation Index® and the Social Sciences Citation Index® during 1992-2003 was analysed using advanced bibliometric techniques. Results: Biomedical research and the global disease burden due to alcohol both increased during 1992-2003, whilst the number of papers from alcohol-related research remained static and declined to <0.7% of all biomedical research literature. Nearly 58% of all alcohol-related research papers were from Canada and the United States, 30% from Western Europe, and 10% from Australia, New Zealand, or Japan. However, these regions suffer only 13% of the global burden of disease due to alcohol; meanwhile, the rest of the world contributed only 8% of the total research whilst suffering from 87% of the disease burden. The estimated annual expenditure on alcohol-related research in 2001 was $730 million, or about $12 per DALY due to alcohol. Conclusions: The global commitment to alcohol-related research is only one-sixth of that warranted by the burden of disease due to alcohol. Most such research is conducted in the developed world but is still less than that appropriate to the regional burden of disease. There is a need for more interest in alcohol-related research in the developing world, particularly in Latin America and Eastern Europe in view of their high burden of disease due to alcohol. © The Author 2005. Published by Oxford University Press on behalf of the Medical Council on Alcohol. All rights reserved.

Keywords: Alcohol, Australia, Average Volume, Canada, Commitment, Consumption, Cost, Dependence, Disability, Disease, Disease Burden, Drinking, Eastern Europe, Europe, Global, Global Burden, Global Burden of Disease, Institutes-of-Health, Interventions, Japan, Latin America, Life, New Zealand, Patterns, Regional, Research, Risk, Techniques, United States

? Roberts, S.C.M. (2011), What can alcohol researchers learn from research about the relationship between macro-level gender equality and violence against women? *Alcohol and Alcoholism*, **46** (2), 95-104.

Full Text: [2011\Alc Alc46, 95.pdf](2011/Alc%20Alc46,%2095.pdf)

Abstract: Aims: This systematic review focuses on research about macro-level gender equality and violence against women (VAW) and identifies conceptually and theoretically driven hypotheses as well as lessons relevant for alcohol research. Hypotheses include: amelioration-increased equality decreases VAW; backlash-increased equality increases VAW; and convergence-increased equality reduces the gender gap; and hypotheses that distinguish between relative and absolute status, with relative status comparing men’s and women’s status and absolute status measuring women’s status without regard to men. Methods: Systematic review of studies published through June 2009 identified through PubMed and Web of Science, as well as citing and cited articles. Results: A total of 30 studies are included. of 85 findings examining amelioration/backlash, 25% support amelioration, 22% backlash; and 53% are null. of 13 findings examining convergence, 31% support and 23% are inconsistent with convergence; 46% are null. Conclusion: Neither the existence nor the direction of the equality and VAW relationship can be assumed. This suggests that the relationship between macro-level gender equality and alcohol should also not be assumed, but rather investigated through research.

Keywords: Alcohol, Domestic Violence, Drinking Behavior, Female Homicide Victimization, Gender, Inequality, Intimate Partner Violence, Methods, Multilevel Analysis, Pubmed, Rape, Research, Researchers, Review, Science, Suicide Rates, Systematic, Systematic Review, United-States, US Cities, Violence, Web of Science, Women

# Title: Alcoholism-Clinical and Experimental Research

Full Journal Title: Alcoholism-Clinical and Experimental Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Schepis, T.S., Rao, U., Yadav, H. and Adinoff, B. (2011), The limbic-hypothalamic-pituitary-adrenal axis and the development of alcohol use disorders in youth. *Alcoholism-Clinical and Experimental Research*, **35** (4), 595-605.

Full Text: [2011\Alc-Cli Exp Res35, 595.pdf](2011/Alc-Cli%20Exp%20Res35,%20595.pdf)

Abstract: Objective: As the initiation and acceleration of alcohol use commonly occurs during adolescence, the etiological basis for this phenomenon is of critical importance. Using the diathesis-stress model as a framework, this review will evaluate the emerging evidence implicating the limbic-hypothalamic-pituitary-adrenal (LHPA) axis in the development of alcohol use disorder (AUD). Method: Searches were conducted of the PubMed/Medline, PsycInfo, PsycBooks, Cochrane and ISI Web of Science databases, using a specified set of search terms. Results: Genetic liabilities, antenatal stress/anxiety or exposure to addictive substances, exposure to maltreatment or other traumatic events in childhood and psychiatric illness in childhood/adolescence can all increase the risk, or diathesis, for AUD. Greater LHPA dysfunction may serve as a marker for higher diathesis levels in youth. When exposed to stressors in adolescence, high-risk youth (or those with greater LHPA dysfunction) may use alcohol and/or other substances to cope with stressors and, in turn, become more vulnerable to AUD. Conclusion: Evidence suggests that LHPA dysfunction and stress play an important role in the development of AUD. Genetic liabilities, antenatal insults, maltreatment, and psychiatric illness appear to increase LHPA dysfunction, raising risk for AUD. Further research is needed to clarify the complex interplay among adverse developmental experiences, LHPA dysfunction, and the development of AUD in adolescents.

Keywords: Addiction, Adolescent, Adolescents, Alcohol, Alcohol Use Disorder, Antisocial-Behavior, Attention-Deficit, Hyperactivity Disorder, Child, Cochrane, Corticotropin-Releasing-Factor, Databases, Development, Disorder, Family-History, HPA-AXIS, Hypothalamic-Pituitary-Adrenal AXIS, ISI, Model, Posttraumatic-Stress-Disorder, Prenatal Alcohol, Psychosocial Stress, Research, Review, Risk, Salivary Cortisol Responses, Science, Stress, Striatal Dopamine Release, Traumatic Events, Web of Science, Youth

# Title: Aldrichimica Acta

Full Journal Title: Aldrichimica Acta

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Tomalia, D.A. (2004), Birth of a new macromolecular architecture: Dendrimers as quantized building blocks for nanoscale synthetic organic chemistry. *Aldrichimica Acta*, **37** (2), 39-57.

Full Text: [2004\Ald Act37, 39.pdf](2004/Ald%20Act37,%2039.pdf)

Keywords: Core-Shell Tecto(Dendrimers), Atomic-Force Microscopy, Poly(Amidoamine) Dendrimers, Dendritic Macromolecules, Hyperbranched Polymers, Site-Isolation, Cascade Dendrimers, Mass-Spectrometry, Molecular-Weight, Polymerization

# Title: Alimentaria

Full Journal Title: Alimentaria

ISO Abbreviated Title: Alimentaria

JCR Abbreviated Title: Alimentaria

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ugena, S., Resco, E. and Ferreiro, L. (1990), Scientific and technical food journals reviewed by the Journal Citation Reports bibliometric classification. *Alimentaria*, **27** (218), 15-27.

# Title: Alimentary Pharmacology & Therapeutics

Full Journal Title: [Alimentary Pharmacology & Therapeutics](http://www3.interscience.wiley.com/journal/117987555/home)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Simin, M., Brok, J., Stimac, D., Gluud, C. and Gluud, L.L. (2007), Cochrane systematic review: Pegylated interferon plus ribavirin vs. interferon plus ribavirin for chronic hepatitis C. *Alimentary Pharmacology & Therapeutics*, **25** (10), 1153-1162.

Full Text: [2007\Ali Pha The25, 1153.pdf](2007/Ali%20Pha%20The25,%201153.pdf)

Abstract: Background About 170 million patients worldwide have chronic hepatitis C. Pegylated interferon plus ribavirin is currently the recommended therapy. Aim To evaluate the beneficial and harmful effects of pegylated interferon plus ribavirin vs. interferon plus ribavirin for chronic hepatitis C infection. Methods We searched The Cochrane Library, MEDLINE, EMBASE, LILACS, Science Citation Index Expanded and contacted pharmaceutical companies and authors of trials (to March 2005). Results We included 18 randomized clinical trials with 4811 patients. Eleven trials (61%) had allocation bias risks and all had assessment bias risk because of lack of blinding. Compared with interferon plus ribavirin, pegylated interferon plus ribavirin had significant beneficial effects on sustained virological response [risk ratio (RR): 0.80; 95% CI: 0.74 - 0.88]. Data were insufficient to determine impact on long-term outcomes. Pegylated interferon plus ribavirin significantly increased dose reductions (RR: 1.44; 95% CI: 1.14 - 1.82) and adverse events including neutropenia (RR: 2.25; 95% CI: 1.58 - 3.21), thrombocytopenia (RR: 2.28; 95% CI: 1.14 - 4.54), arthralgia (RR: 1.19; 95% CI: 1.05 - 1.35), and injection-site reaction (RR: 2.56; 95% CI: 1.06 - 6.22). Conclusions Pegylated interferon plus ribavirin compared with interferon plus ribavirin increased the proportion of patients with sustained virological response, but at the cost of more adverse events.

Keywords: Antiviral Therapy, Chronic Hepatitis C, Citation, Clinical-Trials, Combination Therapy, Cost, Embase, Hepatocellular-Carcinoma Development, High Viral Load, Initial Treatment, Liver-Disease, Medline, Naive Patients, Natural-History, Pharmaceutical, Randomized Controlled-Trial, Science Citation Index, Science Citation Index Expanded, Therapy

? Mccrea, G.L., Miaskowski, C., Stotts, N.A., Macera, L., Hart, S.A. and Varma, M.G. (2008), Review article: Self-report measures to evaluate constipation. *Alimentary Pharmacology & Therapeutics*, **27** (8), 638-648.

Full Text: [2008\Ali Pha The27, 638.pdf](2008/Ali%20Pha%20The27,%20638.pdf)

Abstract: Background Constipation is a subjective phenomenon, and as such must be evaluated using patient self-report. Valid and reliable measures of constipation are essential to standardize the diagnosis, assess the severity and evaluate the effectiveness of treatments. Aim To compare and contrast published self-report measures of constipation in terms of development, content, general characteristics, psychometric properties and clinical utility. Methods MEDLINE (1966-2007), CINAHL (1980-2007), Cochrane (1993-2007) and Web of Science (1995-2007) were searched to identify self-report measures of constipation. Measures of constipation were selected if they: (i) were self-report measures that measured only constipation; (II) had undergone psychometric testing; (iii) were used in adults and (iv) were written in English. Results Seven self-report measures of constipation were identified. The content areas evaluated by these measures varied. Only two measures had adequate validity and reliability, sensitivity to change, or were tested in more than one sample. Conclusions Findings from this review suggest that the Chinese Constipation Questionnaire and the Patient Assessment of Constipation-Symptom Questionnaire demonstrate adequate psychometric properties for a constipation measure. Additional research is warranted to refine or develop a more comprehensive self-report measure to evaluate constipation in adults.

Keywords: Adults, Assessment, Clinical Utility, Cochrane, Constipation, Definition, Development, Diagnosis, Effectiveness, Epidemiology, Functional Bowel Disorders, Medline, Methods, Population, Questionnaire, Reliability, Research, Review, Scale, Science, Scoring System, Symptoms, United-States, Validation, Validity, Web of Science

? Gluud, L.L., Klingenberg, S.L. and Langholz, S.E. (2008), Systematic review: Tranexamic acid for upper gastrointestinal bleeding. *Alimentary Pharmacology & Therapeutics*, **27** (9), 752-758.

Full Text: [2008\Ali Pha The27, 752.pdf](2008/Ali%20Pha%20The27,%20752.pdf)

Abstract: Background Tranexamic acid may reduce upper gastrointestinal bleeding and stabilize patients before endoscopic treatments. Aim To review randomized trials on tranexamic acid for upper gastrointestinal bleeding. Methods Manual and electronic searches of The Cochrane Library, MEDLINE, EMBASE and Science Citation Index were combined. Intention-to-treat random effect meta-analyses were performed and results presented as RRs with 95% confidence intervals. Results Seven double-blind randomized trials on tranexamic acid vs. placebo were included. of 1754 patients randomized, 21% were excluded. Only one trial included endoscopic treatments or proton pump inhibitors. Five per cent of patients on tranexamic acid and 8% of controls died (RR: 0.61, 95% CI: 0.42-0.89). No significant differences were found on bleeding, bleeding-related mortality, surgery or transfusion requirements. Adverse events were unclearly reported. Data from three of the included trials suggested that tranexamic acid did not significantly increase the risk of thromboembolic disease. Conclusions The present review suggests that tranexamic acid may reduce all-cause mortality. However, because of limitations in the internal and external validity of included trials, additional evidence is needed before treatment recommendations can be made.

Keywords: Antifibrinolytic Therapy, Citation, Disease, Medline, Metaanalysis, Mortality, Placebo, Review, Risk, Science, Science Citation Index, Subarachnoid Hemorrhage, Surgery, Systematic Review, Thrombosis, Tract, Transplantation, Treatment, Validity

? Shao, L.M., Chen, M.Y., Chen, Q.Y. and Cai, J.T. (2009), Meta-analysis: The efficacy and safety of certolizumab pegol in Crohn’s disease. *Alimentary Pharmacology & Therapeutics*, **29** (6), 605-614.

Full Text: [2009\Ali Pha The29, 605.pdf](2009/Ali%20Pha%20The29,%20605.pdf)

Abstract: Certolizumab pegol is the third anti-TNF-alpha agent approved by the Food and Drug Administration of the United States. To provide a comprehensive up-to-date review of the efficacy and safety of certolizumab in Crohn’s disease (CD). Electronic databases, including PubMed, EMBASE, the Cochrane library and the Science Citation Index, were searched to retrieve relevant trials. In addition, meeting abstracts and the reference lists of retrieved articles were reviewed for further relevant studies. Three trials, enrolling a total of 1040 patients, are included in the meta-analysis to evaluate the short-term efficacy of certolizumab, which is effective for rapid induction and long-term maintenance of clinical response or remission and can improve quality of life in patients with Crohn’s disease. Certolizumab is also effective for patients who have lost response to infliximab. However, its efficacy in infliximab-exposed patients is probably less than in infliximab-naive patients. Re-induction with certolizumab in patients who have flared on maintenance therapy can rescue a significant proportion of patients. There is no significant association between the efficacy of certolizumab and the baseline C-reactive protein level. In comparison with placebo, certolizumab does not increase the risk of serious adverse events. Certolizumab is effective and safe in treating Crohn’s disease. Further studies are still required to assess its full safety profile.

Keywords: Anti-Tnf-Alpha, Antitumor Necrosis Factor, C-Reactive Protein, Clinical-Trials, Inflammatory-Bowel-Disease, Maintenance Therapy, Monoclonal-Antibody, Placebo-Controlled Trial, Quality-Of-Life, Randomized-Trial

? Zhang, Y., Chen, Q.B., Gao, Z.Y. and Xie, W.F. (2009), Meta-analysis: Octreotide prevents post-ERCP pancreatitis, but only at sufficient doses. *Alimentary Pharmacology & Therapeutics*, **29** (11), 1155-1164.

Full Text: [2009\Ali Pha The29, 1155.pdf](2009/Ali%20Pha%20The29,%201155.pdf)

Abstract: Effects of octreotide on post-endoscopic retrograde cholangiopancreatography pancreatitis have been studied in many clinical trials. These trials have yielded inconclusive results. Results of more recent studies using larger doses, however, seem to be more optimistic. To examine effects of octreotide at different doses on PEP. A comprehensive search of relevant databases, including Medline, Embase, the Cochrane Controlled Trials Register, the Cochrane Library and Science Citation Index yielded 18 randomized controlled trials (RCTs). Trials were divided into two groups according to the total dosage of octreotide: < 0.5 mg (OCT1), >= 0.5 mg (OCT2). The rate of PEP was analysed using a fixed effect model. At doses of >= 0.5 mg, octreotide reduced the rate of PEP. In the OCT2 group, analysis revealed a statistically significant difference on PEP between the octreotide group and the controls (3.4% vs. 7.5%, pooled OR = 0.45; 95% CI: 0.28-0.73; P = 0.001, NNT = 25). In the OCT1 group, the rate of PEP was similar between patients receiving octreotide and the controls (7.2% vs. 6.0%, pooled OR = 1.23; 95% CI: 0.80-1.91; P = 0.35). Octreotide is effective in preventing PEP, but only at sufficient doses (>= 0.5 mg).

Keywords: Allopurinol, Clinical-Trials, Endoscopic Retrograde Cholangiopancreatography, Hyperamylasemia, Multicenter, Placebo, Prophylactic Octreotide, Randomized Controlled Trial, Risk, Somatostatin Analog Octreotide

? Cohen, R.D., Yu, A.P., Wu, E.Q., Xie, J., Mulani, P.M. and Chao, J. (2010), Systematic review: The costs of ulcerative colitis in Western countries. *Alimentary Pharmacology & Therapeutics*, **31** (7), 693-707.

Full Text: [2010\Ali Pha The31, 693.pdf](2010/Ali%20Pha%20The31,%20693.pdf)

Abstract: P>Background Early onset and complications such as hospitalization and surgery contribute to the economic burden of ulcerative colitis. Aim To review systematically the literature on costs of ulcerative colitis in Western countries. Methods Studies estimating costs of ulcerative colitis in Western countries were identified using Medline, EMBASE and ISI Web of Science and were rated based on relevance and reliability of estimates. All costs were adjusted to 2008 currency values. A parallel review focused on the impact of disease severity on costs, hospitalizations and surgeries. Results Estimated annual per-patient direct medical costs of ulcerative colitis ranged from $6217 to $11 477 in the United States and from euro8949 to euro10 395 in Europe. Hospitalizations accounted for 41-55% of direct medical costs. Indirect costs accounted for approximately one-third of total costs in the United States and 54-68% in Europe. Total economic burden of ulcerative colitis was estimated at $8.1-14.9 billion annually in the United States and at euro12.5-29.1 billion in Europe; total direct costs were $3.4-8.6 billion in the United States and euro5.4-12.6 billion in Europe. Direct costs, hospitalizations and surgeries increased with worsening disease severity. Conclusions Ulcerative colitis is a costly disease. Hospitalizations contribute significantly to direct medical costs, and indirect costs are considerable, having previously been substantially underestimated.

Keywords: Burden, Costs, Crohns-Disease, Direct Medical Costs, Disease, Economic Burden, EMBASE, Europe, Follow-up, Health-Care Costs, Hospitalization, Hospitalizations, Impact, Inflammatory-Bowel-Disease, ISI, Literature, Medical, Medical Therapy, Methods, Pouch-Anal Anastomosis, Prevalence, Reliability, Resource Utilization, Review, Science, Surgery, Systematic, Systematic Review, Total Colectomy, Ulcerative Colitis, United-States, Web of Science

? Bai, Y., Guo, J.F. and Li, Z.S. (2011), Meta-analysis: Erythromycin before endoscopy for acute upper gastrointestinal bleeding. *Alimentary Pharmacology & Therapeutics*, **34** (2), 166-171.

Full Text: [2011\Ali Pha The34, 166.pdf](2011/Ali%20Pha%20The34,%20166.pdf)

Abstract: Background Studies evaluating the effect of erythromycin on patients with acute upper gastrointestinal bleeding (UGIB) had been reported, but the results were inconclusive. Aims To compare erythromycin with control in patients with acute UGIB by performing a meta-analysis. Methods Electronic databases including PubMed, EMBASE and the Cochrane Library, Science Citation Index, were searched to find relevant randomised controlled trials (RCTs). Two reviewers independently identified relevant trials evaluating the effect of erythromycin on patients with acute UGIB. Outcome measures were the incidence of empty stomach, need for second endoscopy, blood transfusion, length of hospital stay, endoscopic procedure time and mortality. Results Four RCTs including 335 patients were identified. Meta-analysis demonstrated the incidence of empty stomach was significantly increased in patients receiving erythromycin (active group 69%, control group 37%, P < 0.00001). The need for second endoscopy, amount of blood transfusion and the length of hospital stay were also significantly reduced (all P < 0.05). A trend for shorter endoscopic procedure time and decreased mortality rate was observed. Conclusions Prophylactic erythromycin is useful for patients with upper gastrointestinal bleeding to decrease the amount of blood in the stomach and reduce the need for second endoscopy, amount of blood transfusion. It may shorten the length of hospital stay, but its effects on mortality need further larger trials to be confirmed.

Keywords: Bias, Citation, Databases, Double-Blind Trial, Embase, Hemorrhage, Improves, Infusion, Management, Meta-Analysis, Pubmed, Quality, Science Citation Index, Trend

? Chavez-Tapia, N.C., Barrientos-Gutierrez, T., Tellez-Avila, F., Soares-Weiser, K., Mendez-Sanchez, N., Gluud, C. and Uribe, M. (2011), Meta-analysis: Antibiotic prophylaxis for cirrhotic patients with upper gastrointestinal bleeding - an updated Cochrane review. *Alimentary Pharmacology & Therapeutics*, **34** (5), 509-518.

Full Text: [2011\Ali Pha The34, 509.pdf](2011/Ali%20Pha%20The34,%20509.pdf)

Abstract: Background Antibiotic prophylaxis seems to decrease the incidence of bacterial infections in patients with cirrhosis and upper gastrointestinal bleeding and is considered standard of care. However, there is no updated information regarding the effects of this intervention. Aim To assess the benefits and harms of antibiotic prophylaxis in cirrhotic patients with gastrointestinal bleeding by performing a systematic review of randomised trials. Methods We searched The Cochrane Hepato-Biliary Group Controlled Trials Register, The Cochrane Central Register of Controlled Trials in The Cochrane Library, MEDLINE, EMBASE and Science Citation Index EXPANDED until June 2010. We statistically combined data calculating relative risk (RR) for dichotomous outcomes and mean difference (MD) for continuous outcomes. Results Twelve trials (1241 patients) evaluating antibiotic prophylaxis against placebo or no antibiotic prophylaxis were included. Antibiotic prophylaxis was associated with reduced mortality (RR 0.79, 95% CI 0.63-0.98), mortality from bacterial infections (RR 0.43, 95% CI 0.19-0.97), bacterial infections (RR 0.35, 95% CI 0.26-0.47), rebleeding (RR 0.53, 95% CI 0.38-0.74) and days of hospitalisation (MD) 1.91, 95% CI) 3.80-0.02). Trials analysing rebleeding rate and hospitalisation length are still scarce, thus, caution should be exerted when interpreting the results. Conclusions Antibiotic prophylaxis in patients with cirrhosis and upper gastrointestinal bleeding significantly reduced bacterial infections, and reduce all-cause mortality, bacterial infection mortality, rebleeding events and hospitalisation length. Novel clinically significant outcomes were included in this metaanalysis. Some benefits are biased and the risks are not yet properly assessed, this encourages future research in this field.

Keywords: Acute Variceal Hemorrhage, Ceftriaxone, Ciprofloxacin, Citation, Embase, Endoscopic Sclerotherapy, Esophageal-Varices, Information, Intervention, Medline, Meta-Analysis, Methods, Norfloxacin, Outcomes, Portal-Hypertension, Prevents Bacterial-Infection, Randomized-Trial, Research, Review, Science, Science Citation Index, Systematic Review, Therapy

# Title: Allergy

Full Journal Title: [[Allergy](http://www3.interscience.wiley.com/journal/118519659/home)](http://www.blackwell-synergy.com/servlet/useragent?func=showIssues&code=all)

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Subject Categories:

Allergy: Impact Factor 0.2552, 2/15 (2001);

Immunology: Impact Factor 0.2552, 4/114 (2001);

? Seglen, P.O. (1997), Citations and journal impact factors: Questionable indicators of research quality. *Allergy*, **52** (11), 1050-1056.

Full Text: [1997\Allergy52, 1050.pdf](1997/Allergy52,%201050.pdf)

Keywords: Impact, Impact Factors, Indicators, Journal, Journal Impact, Journal Impact Factors, Quality, Research, Research Quality

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Full Text: [1998\Allergy53, 1225.pdf](1998/Allergy53,%201225.pdf)

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Full Text: [2007\Allergy62, 115.pdf](2007/Allergy62,%20115.pdf)

Keywords: Allergy, Analysis, Hymenoptera, Productivity, Scientific Productivity

? Sheikh, A., ten Broek, V., Brown, S.G.A. and Simons, F.E.R. (2007), H1-antihistamines for the treatment of anaphylaxis: Cochrane systematic review. *Allergy*, **62** (8), 830-837.

Full Text: [2007\Allergy62, 830.pdf](2007/Allergy62,%20830.pdf)

Abstract: Background: Anaphylaxis is an acute systemic allergic reaction, which can be life-threatening. H-1-antihistamines are commonly used as an adjuvant therapy in the treatment of anaphylaxis. We sought to assess the benefits and harm of H-1-antihistamines in the treatment of anaphylaxis. Methods:We searched the Cochrane Central Register of Controlled Trials (CENTRAL, The Cochrane Library); MEDLINE (1966 to June 2006); EMBASE (1966 to June 2006); CINAHL (1982 to June 2006) and ISI Web of Science (1945 to July 2006). We also contacted pharmaceutical companies and international experts in anaphylaxis in an attempt to locate unpublished material. Randomized and quasi-randomized-controlled trials comparing H-1-antihistamines with placebo or no intervention were eligible for inclusion. Two authors independently assessed articles for inclusion. Results:We found no studies that satisfied the inclusion criteria. Conclusions:Based on this review, we are unable to make any recommendations for clinical practice. Randomized-controlled trials are needed, although these are likely to prove challenging to design and execute.

Keywords: Adjuvant Therapy, Adolescents, Anaphylaxis, Authors, Children, Cochrane, Double-Blind, Effectiveness, Efficacy, Embase, Emergency-Department, Food, H1-Antihistamines, Intervention, ISI, Management, Medline, Multicenter, Pharmaceutical Companies, Placebo, Practice, Randomized Controlled Trials, Review, Science, Severity, Systematic, Systematic Review, Therapy, Treatment, Web of Science

? Anandan, C., Nurmatov, U. and Sheikh, A. (2009), Omega 3 and 6 oils for primary prevention of allergic disease: Systematic review and meta-analysis. *Allergy*, **64** (6), 840-848.

Full Text: [2009\Allergy64, 840.pdf](2009/Allergy64,%20840.pdf)

Abstract: There is conflicting evidence on the use of omega 3 and omega 6 supplementation for the prevention of allergic diseases. We conducted a systematic review evaluating the effectiveness of omega 3 and 6 oils for the primary prevention of sensitization and development of allergic disorders. We searched The Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, LILACS, PsycInfo, AMED, ISI Web of Science and Google Scholar for double-blind randomized controlled trials. Two authors independently assessed articles for inclusion. Meta-analyses were undertaken using fixed effects modelling, or random effects modelling in the event of detecting significant heterogeneity. of the 3129 articles identified, 10 reports (representing six unique studies) satisfied the inclusion criteria. Four studies compared omega 3 supplements with placebo and two studies compared omega 6 supplements with placebo. There was no clear evidence of benefit in relation to reduced risk of allergic sensitization or a favourable immunological profile. Meta-analyses failed to identify any consistent or clear benefits associated with use of omega 3 [atopic eczema: RR = 1.10 (95% CI 0.78-1.54); asthma: RR = 0.81 (95% CI 0.53-1.25); allergic rhinitis: RR = 0.80 (95% CI 0.34-1.89) or food allergy RR = 0.51 (95% CI 0.10-2.55)] or omega 6 oils [atopic eczema: RR = 0.80 (95% CI 0.56-1.16)] for the prevention of clinical disease. Contrary to the evidence from basic science and epidemiological studies, our systematic review and meta-analysis suggests that supplementation with omega 3 and omega 6 oils is probably unlikely to play an important role as a strategy for the primary prevention of sensitization or allergic disease.

Keywords: Allergic Rhinitis, Asthma, Atopic-Dermatitis, Authors, Childhood Asthma Prevention, Children, Cochrane, Development, Disease, Eczema, Effectiveness, Embase, Fish Consumption, Food Allergy, Google Scholar, High-Risk, Infants, ISI, Linolenic Acid Supplementation, Medline, Meta-Analysis, Omega Oils, Outcomes, Pregnancy, Prevention, Primary, Primary Prevention, Profile, Randomized Controlled Trials, Randomized Controlled-Trial, Review, Risk, Science, Strategy, Systematic, Systematic Review, Web of Science

? Anandan, C., Nurmatov, U., van Schayck, O.C.P. and Sheikh, A. (2010), Is the prevalence of asthma declining? Systematic review of epidemiological studies. *Allergy*, **65** (2), 152-167.

Full Text: [2010\Allergy65, 152.pdf](2010/Allergy65,%20152.pdf)

Abstract: P>Asthma prevalence has increased very considerably in recent decades such that it is now one of the commonest chronic disorders in the world. Recent evidence from epidemiological studies, however, suggests that the prevalence of asthma may now be declining in many parts of the world, which, if true is important for health service planning and also because this offers the possibility of generating and testing new aetiological hypotheses. Our objective was to determine whether the prevalence of asthma is declining worldwide. We undertook a systematic search of EMBASE, Medline, Web of Science and Google Scholar, for high quality reports of cohort studies, repeat cross-sectional studies and analyses of routine healthcare datasets to examine international trends in asthma prevalence in children and adults for the period 1990-2008. There were 48 full reports of studies that satisfied our inclusion criteria. The large volume of data identified clearly indicate that there are, at present, no overall signs of a declining trend in asthma prevalence; on the contrary, asthma prevalence is in many parts of the world still increasing. The reductions in emergency healthcare utilization being reported in some economically developed countries most probably reflect improvements in quality of care. There remain major gaps in the literature on asthma trends in relation to Africa and parts of Asia. There is no overall global downward trend in the prevalence of asthma. Healthcare planners will for the foreseeable future, therefore, need to continue with high levels of anticipated expenditure in relation to provision of asthma care.

Keywords: 14-Year-Old Children, Adults, Africa, Allergic Rhinitis, Asia, Asthma, Atopic Eczema, Childhood Asthma, Children, Cohort Studies, Embase, Epidemiology, Google Scholar, Healthcare, Increasing Prevalence, Isaac Phase-I, Literature, National Databases, Prevalence, Primary-School Children, Quality of Care, Respiratory Symptoms, Review, Science, South-Australia, Systematic, Systematic Review, Trend, Trends, Utilization, Web of Science

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Full Text: [2011\Allergy66, 740.pdf](2011/Allergy66,%20740.pdf)

Abstract: P>Allergic rhinitis is common worldwide, with significant morbidity and impact on quality of life. In patients who don’t respond adequately to anti-allergic drugs. Subcutaneous allergen immunotherapy is effective although requires specialist administration. Sublingual immunotherapy may represent an effective and safer alternative. This Cochrane systematic review is an update of one published in 2003. We searched Cochrane ENT Group Trials Register, Central, PubMed, EMBASE, CINAHL, Web of Science, Biosis Previews, Cambridge Scientific Abstarcts, mRCT and additional sources. We included randomised, double-blind, placebo- controlled trials of sublingual immunotherapy in adults and children. Two authors selected studies and assessed them for quality. Data were put into RevMan 5.0 for a statistical analysis. We used standardised mean difference (SMD), with a random effect model to combine data. Sixty studies were included, with 49 suitable for meta-analysis. We found significant reductions in symptoms (SMD -0.49; 95%CI (-0.64 to -0.34, P < 0.00001)) and medication requirements (SMD -0.32; 95%CI (-0.43 to -0.21, P < 0.00001)) compared with placebo. None of the trials reported severe systemic reactions, anaphylaxis or use of Adrenaline. This updated review reinforces the conclusion of the original 2003 Cochrane Review that sublingual immunotherapy is effective for allergic rhinitis and appears a safe route of administration.

Keywords: Adults, Allergic Rhinitis, Analysis, Anaphylaxis, Authors, Children, Clinical-Efficacy, Cochrane, Double-Blind, EMBASE, Grass Allergen Tablets, House-Dust-Mite, Immunotherapy, Impact, Medication, Meta-Analysis, Model, Morbidity, Parietaria-Judaica Extract, Placebo-Controlled Trial, Pollen Extract, Pubmed, Quality of Life, Randomized Controlled-Trial, Review, Science, Standardized 5-Grass-Pollen Extract, Statistical, Swallow Immunotherapy, Symptoms, Systematic, Systematic Review, Web of Science

# Title: Allergy and Asthma Proceedings

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Language: English

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Publisher Address: 95 Pitman St, Providence, RI 02906

Subject Categories:

Allergy: Impact Factor 0.975, / (2002)

? Skoner, D.P. (2001), Management and treatment of pediatric asthma: Update. *Allergy and Asthma Proceedings*, **22** (2), 71-74.

Abstract: Much of what we know about the pathogenesis and treatment of asthma has been learned from adult studies. Recently, a dramatic shift reward the pediatric age group has occurred in both of these areas. Such studies in children have overall supported similarities with the adult population with regard to pathogenesis (airway inflammation) and treatment (anti-inflammatory controller medications). However the onset of asthma symptoms in less than 5 years is 80% of the rime, get controller medications approved for children under 4 years of age have generally; not been available. This treatment gap was recently filled by the FDA approval of two important asthma controller medications. This review will focus on the use of leukotriene receptor antagonists and inhaled corticosteroids, which were recently approved for use in asthmatic children under 4 years of age.

Keywords: Budesonide Inhalation Suspension, Long-Term Treatment, Fluticasone Propionate, Inhaled Budesonide, Beclomethasone Dipropionate, 14-Year-Old Children, Collagen Turnover, Persistent Asthma, Controlled Trial, Young-Children

Keywords: Bibliometric Indicators, Science, Field, Tool, Citedness, Chance, Mode

? Breitbart, S.I. and Bielory, L. (2010), Acquired angioedema: Autoantibody associations and C1q utility as a diagnostic tool. *Allergy and Asthma Proceedings*, **31** (5), 428-434.

Full Text: [2010\All Ast Pro31, 428.pdf](2010/All%20Ast%20Pro31,%20428.pdf)

Abstract: Acquired Angioedema (AAE) is a rare condition classified into two subtypes: Type I, which is associated with lymphoproliferative disorders, and Type II, which is linked with autoantibodies against C1-esterase inhibitor (C1-INH). Unlike Type I AAE, Type II has no correlation with lymphoproliferative disorders. We report the evaluation of angioedema that was associated with an underlying lymphoproliferative disorder for the purpose of discussing the relationship between C1q and a diagnosis of AAE. A literature review was completed for the purpose of assessing the diagnostic value of C1q when used in the workup of AAE. A PubMed/Web of Science search (1976-2010) produced 78 references (yielding 167 individual cases of AAE) using terminology “AAE.” The case described a patient with a depressed C1q (<3.5 mg/dL), decreased C4 (<3 mg/dL), decreased C1-inhibitor (1 mg/dL), decreased functional C1-INH (12%), and decreased total complement (<10 U/mL). Autoantibodies against C1-INH (free and bound respectively) were normal (12.4% and 10.1% of the standard of deviation). Using the above figures and data collected from the literature search, we tabulated 168 individual cases of AAE. of the 168 cases, C1q was drawn in 104 cases, and 64 cases have no information regarding C1q. There are 10 cases where the C1q was documented as normal. With these values, a correlation between C1q and a diagnosis of AAE was assessed: A decreased C1q correlated with a diagnosis of AAE approximately 56%-94% of the time. C1q is a useful tool when working up a case of AAE.

Keywords: Angioneurotic-Edema, Antiphospholipid Syndrome, C1-Inhibitor Deficiency, Diagnosis, Disorder, Esterase Inhibitor Deficiency, Evaluation, Functional, Hereditary Angioedema, Information, Literature, Literature Review, Lymphoproliferative Disorders, Monoclonal Gammopathy, Non-Hodgkins-Lymphoma, Normal, Recurrent Angioedema, Review, Science, Systemic-Lupus-Erythematosus

# Title: Alternative Sewer Systems

Manual of Practice No. FD-12 Facilities Development, Alexandria

Schmidt, H.E. (1986), *Alternative Sewer Systems*, Manual of Practice No. FD-12 Facilities Development, Alexandria.

# Title: Alternative Therapies in Health and Medicine

Full Journal Title: [Alternative Therapies in Health and Medicine](http://global.umi.com/pqdweb?TS=0&JSEnabled=1&RQT=317&SK=2&ScQ=000038441&TS=1030080836)

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# Title: Alternatives-Perspectives on Society Technology and Environment

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Language: English

Publisher: Alternatives

Publisher Address: Univ Waterloo Fac Environmental Studies, Waterloo, Ontario N2l 3G1, Canada

Subject Categories:

Environmental Sciences: Impact Factor 0.019, /126 (1999); Impact Factor 0, 125/127 (2000)

? Morin, S. (1993), Montreal signs contract for new incinerator. *Alternatives-Perspectives on Society Technology and Environment*, **19** (4), 11.

# Title: Alzheimer Disease & Associated Disorders

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JCR Abbreviated Title: Alz Dis Assoc Dis

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Journal Country/Territory: United States

Language: English

Publisher: Lippincott Williams & Wilkins

Publisher Address: 530 Walnut St, Philadelphia, PA 19106-3621

Subject Categories:

Clinical Neurology Pathology: Impact Factor

? Gwyther, L.P. (1997), The perspective of the person with Alzheimer disease: Which outcomes matter in early to middle stages of dementia? *Alzheimer Disease & Associated Disorders*, **11** (S6), 18-24.

Abstract: As more persons with Alzheimer disease are diagnosed earlier in the disease progression, their perspectives, values, and preferences warrant closer attention from clinicians, service planners and providers, and the research community. Demographic changes suggest that more persons with early-stage Alzheimer disease will be living alone. Their treatment, housing, and service preferences, as well as values about desirable health, mental health, and cognitive and functional outcomes may differ from those of their concerned families. Clinicians and researchers must identify relevant domains of life quality from the perspective of the person with dementia and develop individually sensitive, reliable, and valid instruments to assess, monitor, and evaluate outcomes of care and services.

Keywords: Long-Term-Care, Dementia, Outcomes, Values

# Title: Ambio

Full Journal Title: Ambio

ISO Abbreviated Title: Ambio

JCR Abbreviated Title: Ambio

ISSN: 0044-7447

Issues/Year: 8

Journal Country/Territory: Sweden

Language: English

Publisher: Royal Swedish Acad Sciences, Stockholm

Publisher Address: Publ Dept Box 50005, S-104 05 Stockholm, Sweden

Subject Categories:

Engineering, Environmental: Impact Factor 1.142, / (2000); Impact Factor 1.449, 2/38 (2001)

Environmental Sciences: Impact Factor 1.142, / (2000); Impact Factor 1.449, 7/129 (2001)

Ferrier, C. (2001), Bottled water: Understanding a social phenomenon. *Ambio*, **30** (2), 118-119.

Full Text: [A\Ambio30, 118.pdf](A/Ambio30,%20118.pdf)

# Title: America Chemical Society Symposium Series

(ACS Symp. S; ACS Symp. Ser.)

Title: Adsorption and Ion Exchange with Synthetic Zeolites

Publishers American Chemical Society, Washington, D.C., ACS Symposium Series

Woltman, A.W. and Hartwig, W.H. (1980), The solution theory modeling of gas adsorption on zeolites. in *Adsorption and Ion Exchange with Synthetic Zeolites*, (Edited by Flank, W.H.), Publishers American Chemical Society, Washington, D.C., ACS Symposium Series **135**, 1-25.

Mathews, A.P. and Weber, Jr., W.J. (1980), Mathematical modeling of adsorption in multicomponent systems. in *Adsorption and Ion Exchange with Synthetic Zeolites*, (Edited by Flank, W.H.), Publishers American Chemical Society, Washington, D.C., ACS Symposium Series **135**, 26-53.

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# Title: America Institute of Chemical Engineers Symposium Series

Subseries of: Chemical Engineering Progress (Chem. Eng. Prog.)

Continued by: AIChE. Eng.

Chemical Engineering Progress, Symposium Series (AIChE. Eng.; AIChE. Symposium Series; A.I.Ch.E. Symp. Ser.)

Ranz, W.E. and Marshall, Jr., W.R. (1952), Evaporation from drops Part II. *Chemical Engineering Progress*, **48**, 173-180.

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Full Text: [A\Ame Ins Che Eng Sym Ser73, 91.pdf](A/Ame%20Ins%20Che%20Eng%20Sym%20Ser73,%2091.pdf)

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Kyzer, C.T. (1990), Forming alliance for the export of U.S. process technology. *American Institute of Chemical Engineers Symposium Series*, **274**, 74-78.

Schepman, B. (1990), The role of smaller firms in international trade. *American Institute of Chemical Engineers Symposium Series*, **274**, 79-83.

Lewett, G.P. (1990), Stimulating competitiveness of technology-based businesses through an “inventions” program. *American Institute of Chemical Engineers Symposium Series*, **274**, 84-86.

Wei, J. (1990), A summary of a panel discussion: How are we doing and what should we do to make things bestter? *American Institute of Chemical Engineers Symposium Series*, **274**, 87-88.

# Title: American Anthropologist

Full Journal Title: American Anthropologist

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Demerath, P. (2011), My word! Plagiarism and college culture. *American Anthropologist*, **113** (1), 163-164.

Full Text: [2011\Ame Ant113, 163.pdf](2011/Ame%20Ant113,%20163.pdf)

Keywords: Plagiarism

# Title: American Bar Association Journal

Full Journal Title: [American Bar Association Journal](http://www.heinonline.org/HOL/Index?index=journals/abaj&collection=journals)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Herbert, W.A. (1969), Treadmills of self-citation. *American Bar Association Journal*, **55** (NOV), 1006.

Full Text: [1969\Ame Bar Ass J55, 1006.pdf](1969/Ame%20Bar%20Ass%20J55,%201006.pdf)

# Title: American Behavioral Scientist

Full Journal Title: American Behavioral Scientist

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

? Garfield, E. and Sher, I.H. (1967), ASCA (Automatic Subject Citation Alert) - A new personalized current awareness service for scientists. *American Behavioral Scientist*, **10** (5), 29-32.

Full Text: [1960-80\Ame Beh Sci10, 29.pdf](1960-80/Ame%20Beh%20Sci10,%2029.pdf)

Abstract: Citation indexing serves as the basis for a large-scale personalized reference system offered on a subscription basis by the Institute for Scientific Information in Philadelphia, Pennsylvania. Dr. Eugene Garfield is President of ISI and Irving Sher is Vice-President in charge of Research and Development.

Keywords: Citation

# Title: American Ceramic Society Bulletin

Full Journal Title: American Ceramic Society Bulletin

ISO Abbreviated Title: Am. Ceram. Soc. Bull.

JCR Abbreviated Title: Am Ceram Soc Bull

ISSN: 0002-7812

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Ceramic Soc

Publisher Address: 735 Ceramic Place, PO Box 6136, Westerville, OH 43081-6136

Subject Categories:

Materials Science, Ceramics: Impact Factor

Boccaccini, A.R., Petitmermet, M. and Wintermantel, E. (1997), Glass-ceramics from municipal incinerator fly ash. *American Ceramic Society Bulletin*, **76** (11), 75-78.

Keywords: Waste

# Title: American Documentation

[American Documentation](http://proquest.umi.com/pqdweb?RQT=318&pmid=66158) 1950-1969 Vol 1-20, [Journal of the American Society for Information Science](http://www3.interscience.wiley.com/journal/117946195/grouphome/home.html) 1970- Vol 21-

Full Journal Title: [American Documentation](http://proquest.umi.com/pqdweb?RQT=318&pmid=66158)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0096-946X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Burton, R.E. and Kebler, R.W. (1960), The “half-life” of some scientific and technical literature. *American Documentation*, **11** (1), 18-22.

Full Text: [1960-80\Ame Doc11, 18.pdf](1960-80/Ame%20Doc11,%2018.pdf)

Abstract: A consideration of the analogy between the half-life of radioactive substances and the rate of obsolescence of scientific literature. The validity of this analogy suggests the possibility of more accurate prognostications concerning the period of time during which scientific literature may be used and hence might help to guide the planning of library collections and technical information services.

Notes: highly cited

? Garfield, E. and Sher, I.H. (1963), New factors in evaluation of scientific literature through citation indexing. *American Documentation*, **14** (3), 195-201.

Full Text: [1960-80\Ame Doc14, 195.pdf](1960-80/Ame%20Doc14,%20195.pdf)

Abstract: This article focuses on a study that deals with new factors in the evaluation of scientific literature through citation indexing. The article makes specific reference to a project of citation indexing funded by the U.S. National Science Foundation, National Institutes of Health, and the Institute for Scientific Information. In contrast to conventional indexes, which take one back in time, a citation index brings one forward in time and thereby writes the “subsequent history” of the particular document under investigation. In the aforesaid project, citations from the scientific literature are entered on punched cards and processed by computer to produce citation indexes, that is, ordered lists of references which are accompanied by citations for documents in which they have been cited.

Keywords: Citation

Lipetz, B.A. (1965), Improvement of the selectivity of citation indexes to science literature through inclusion of citation relationship indicators. *American Documentation*, **16** (2), 81-90.

Full Text: [1960-80\Ame Doc16, 81.pdf](1960-80/Ame%20Doc16,%2081.pdf)

Abstract: Citation indexes to large bodies of science literature can often list far more citing references under the known cited reference than the user can afford the time to look up. By providing some additional information, beyond the minimal association of the citing reference with the cited reference, a citation index could provide the means for the user to select from a long list those citing references which are most relevant to his immedi- ate search requirement. Means of providing this selec- tivity are discussed. Particular attention is given to the possibility of adding short codes to the citation entries which would be informative on the way in which the citing publication is operationally related to the cited one (this method is an integral feature of the Shepard’s legal citations). A scheme of citation relationships of potential value to users of science literature is presented. These relationships were tested on a sampling of physics literature. The suggested categories include indicators of the relation of the citing reference to the scientific proc- ess in general, as well as indicators of its relationship to the cited reference in particular. Assignment of the categories to a citation requires the exercise of judg- ment, as in subject indexing, but does not involve the use of subject terminology. An illustration is provided of the application of citation relationship indicators to an excerpt from a citation index to physics literature.

Kaplan, N. (1965), The norms of citation behavior: Prolegomena to the footnote. *American Documentation*, **16** (3), 179-184.

Full Text: [1960-80\Ame Doc16, 179.pdf](1960-80/Ame%20Doc16,%20179.pdf)

Abstract: The publications explosion has focused renewed attention on the lowly footnote. While we are all at least partially aware of the technical functions of the citation for both the writer and the reader of the scientific paper, little is known about the norms operating in actual practice. Even less is known about the operating norms with respect to the more sociological functions, including the acknowledgement of intellectual debts or the conferral of recognition upon the works of others. This paper reviews the state of our knowledge, raises questions, and proposes suggestions and hypotheses for studying the relationships between footnoting practices among scientists and the social system of science.

Groos, O.V. (1967), Bradford’s law and the Keenan-Atherton data. *American Documentation*, **18** (1), 46.

Full Text: [1960-80\Ame Doc18, 46.pdf](1960-80/Ame%20Doc18,%2046.pdf)

Abstract: Bradford’s methods are applied to the Keenan-Ather- ton data. The results do not fit Bradford’s Law.

? Spencer, C.C. (1967), Subject searching with Science Citation Index: Preparation of a drug bibliography using Chemical Abstracts Index Medicus and Science Citation Index 1961 and 1964. *American Documentation*, **18** (2), 87-96.

Full Text: [1960-80\Ame Doc18, 87.pdf](1960-80/Ame%20Doc18,%2087.pdf)

Keywords: Chemical Abstracts, Citation, Science Citation Index

Groos, O.V. (1968), Relative importance of articles-cited versus titles-cited in frequency counts. *American Documentation*, **19** (1), 102.

Full Text: [1960-80\Ame Doc19, 102.pdf](1960-80/Ame%20Doc19,%20102.pdf)

Abstract: A frequency count was made on the Bibliographie Geo- desique Internationale for the period 1928 through 1945, with cumulations for 1928-1934, 1928-1937, 1928-1940, and 1928-1945. The results were arranged in Bradford order of decreasing citations per title. This Bradford list was then split between the values for the “most-cited” serial titles carrying 50% of the citations and the “least-cited” titles carrying the other half of the citations.

# Title: American Dyestuff Reporter

(*Am. Dyest. Rep.*; *Amer. Dyestuffs Reptr.*; Amer. Dyestuffs Rep.; Amer. Dyestuffs Reporte)

Full Journal Title: [American Dyestuff Reporter](http://vnweb.hwwilsonweb.com/hww/Journals/getIssues.jhtml?sid=HWW:OMNIS&id=-4682)

ISSN: 0002-8266

Full Journal Title: Textile Chemist and Colorist & American Dyestuff Reporter

ISO Abbreviated Title: Text. Chem. Color Am. Dyest. Rep.

JCR Abbreviated Title: Text Chem Color Am Dyest Rep

ISSN: 1526-2847

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Assoc Textile Chemists Colorists

Publisher Address: Po Box 12215, Res Triangle PK, NC 27709

Subject Categories:

Engineering, Chemical: Impact Factor 0.347, / (2001)

Materials Science, Textiles: Impact Factor 0.347, / (2001)

? Honold, E. (1969), Caustic sorption in cotton fibers of different maturities. *American Dyestuff Reporter*, **58** (5), 25-??.

Keywords: Sorption

Middleton, A.B. (1971), How acticated silica is used to treat water in testile mills? *American Dyestuff Reporter*, **60**, 26-29.

Leslie, M.E. (1974), Peat: New medium for treating dye house effluent. *American Dyestuff Reporter*, **63** (8), 15-18.

? Digiano, F.A., Frye, W.H. and Natter, A.S. (1975), Factors affecting removal of textile dyes by carbon adsorption. *American Dyestuff Reporter*, **64** (8), 15-??.

Keywords: Adsorption

? Adams, A.D. (1976), Carbon adsorption aids activated sludge treatment at dyeing and finishing plants. *American Dyestuff Reporter*, **65** (4), 32-??.

Keywords: Adsorption

McKay, G. (1979), Waste color removal from textile effluents. *American Dyestuff Reporter*, **68** (4), 29-36.

McKay, G. (1980), Color removal by adsorption. *American Dyestuff Reporter*, **69** (3), 38-45.

Keywords: Adsorption

? Seu, G. and Mura, L. (1984), Adsorption of heterocyclic disperse azo dyes by cotton. *American Dyestuff Reporter*, **73** (11), 43-45

Keywords: Adsorption

? Seu, G. and Mura, L. (1984), Adsorption of heterocyclic disperse azo dyes by cotton. *American Dyestuff Reporter*, **73** (12), 49-??.

Keywords: Adsorption

? Shukla, S.R. and Sakhardande, V.D. (1991), Novel method of using reactive dyes for effluent treatment. *American Dyestuff Reporter*, **80**, 38-42.

? Kamel, M.M. (1993), Use of phosphorylated cellulose as cationic dye adsorbents. *American Dyestuff Reporter*, **82**, June, 36.

Abstract: The present investigation analyzes the utilization of three samples of phosphorylated cellulose bearing different amounts of phosphorus as cation dye adsorbents. Several factors affecting dye adsorption rate were studied. The amount of cellulose with different degree of substitution plus type and concentration of dyestuff were found to play a great role in dye adsorption. Also, the effect of shaking time, temperature, as well as pH were studied. Reprinted by permission of the publisher.

Abd-El-Thalouth, I., Kamel, M.M., Haggag, K. and El-Zawahry, M. (1993), Utilizing sugar-cane bagasse pulp and carbamoyl ethyl derivatives as direct dye absorbent. *American Dyestuff Reporter*, **82**, July, 36-41.

Abstract: Pure cellulose was prepared from Egyptian sugar-cane bagasse pulp and allowed to react with acrylamide under the catalytic action of sodium hydroxide. It was found that increasing the time of reaction from 2 to 6 hours has no significant increase in the nitrogen content, i.e. the carbamoyl ethyl groups. On the contrary there is a significant increase in the carboxyl content due to the hydrolysis of amide end groups of carbamoyl ethyl cellulose into carboxy ethyl cellulose. Cellulose, before and after carbamoyl ethylation, was used as direct dye adsorbent. It was found that the rate of adsorption of the untreated cellulose is higher than the carbamoyl ethylated derivatives. Reprinted by permission of the publisher.

Youssef, B.M. (1993), Adsorption of acid dyes by cellulose derivatives. *American Dyestuff Reporter*, **82**, 36-40.

Abstract: Cellulose and cellulose chemically modified with 20 and 30% of N-methylol derivatives of bis (2-carbamoylethyl) ethylamine and/or tris (2-carbamoylethyl) amine were prepared as acid dye adsorbents. Several factors affecting dye adsorption rate were studied. Type and concentration of dyestuff as well as the amount and type of substrate used were found to play a major role in dye adsorption. Also, the effect of shaking time, temperature, pH value of the bath on adsorbed dye was investigated. The recovery of adsorbed dye on modified cellulose was evaluated. Reprinted by permission of the publisher.

Laszlo, J.A. (1994), Removing acid dyes from textile wastewater using biomass for decolorization. *American Dyestuff Reporter*, **83**, 17-21, 48.

Abstract: Recent developments in the use of biomass for the decolorization of dyehouse wastewater and in particular for the removal of acidic dyes are discussed. The use of adsorbents derived from biological matter is one of the oldest methods for the treatment of wastewater. The biological matter decolorizes textile wastewater by adsorption and ion exchange mechanisms. Due to its low cost and availability, biomass has often been investigated but, despite some promising results, it fails the ultimate test of commercial viability. However, based on price and performance, the quaternized lignocellulose substrates seem to offer potential for the treatment of acidic dye-containing effluents. In addition, some form of crosslinked chitosan appears promising.

? Malik, A. and Taneja, U. (1994), Utilizing flyash for color removal of dye effluents. *American Dyestuff Reporter*, **83** (10), 20-27.

Namasivayam, C. and Yamuna, R.T. (1994), Utilizing biogas residual slurry for dye adsorption. *American Dyestuff Reporter*, **83**, August, 22-28.

Abstract: The adsorption of Methylene blue (basic dye) and Acid violet 17 (acid dye) on biogas slurry was investigated for factors such as initial dye concentration, contact time, adsorbent dosage, pH and desorption. Adsorption follows the first order rate expression and Freundlich isotherm n value for Methylene blue and Acid violet was found to be 1.465 and 1.421, representing favorable adsorption. Methylene blue showed above 95% removal in the pH range of 4 to 10.5, whereas Acid violet showed a maximum removal of 99% at pH 2.3 and decreased to 77% with a pH increase to 11.2. The recovery of adsorbed dye on biogas residual slurry was evaluated in different solvents. Reprinted by permission of the publisher.

? Shu, H.Y. and Huang, C.R. (1995), Ultraviolet enhanced oxidation for color removal of azo dye wastewater. *American Dyestuff Reporter*, **84**, 30.

Abstract: The decolorization of eight commercial azo dyes has been studied in a pilot scale photochemical reactor which employs W light and hydrogen peroxide to generate hydroxyl radicals for the destruction of organics in aqueous phase. Results of the decolorization of the simulated dye wastewater were measured by absorbance at characteristic wavelength. Target azo dyes were studied by other investigators, they showed no effect due to biomass through a traditional Activated Sludge Process (ASP). Our results showed that the UV/H2O2 process is a very efficient treatment method on color removal. The effect of UV light intensity, hydrogen peroxide dosage, pH and dye characteristics were also investigated. It is believed that this process is ready to be commercialized. Reprinted by permission of the publisher.

Marmagne, O. and Coste, C. (1996), Color removal from textile plant effluents. *American Dyestuff Reporter*, **??**, April, 15-20.

Full Text: [A\Ame Dye Rep1996, 15.pdf](A/Ame%20Dye%20Rep1996,%2015.pdf)

Abstract: This article evaluates the COD and color levels from dyestuffs, along with the removal abilities of different treatment technologies (biological, chemical, filtration and adsorption). A detailed evaluation of these system is provided, as well as the COD contribution of a variety of dye types. Acid, basic, reactive, vat, disperse, direct, mordant, and sulfur dyes are also discussed.

Ramakrishna, K.R. and Viraraghavan, T. (1996), Dye removal using peat. *American Dyestuff Reporter*, **85**, October, 28-34.

Abstract: The adsorption capacity of peat for dye removal from wastewaters was studied and its performance was compared with granular activated carbon (GAC). The peat studied was a commercial variety used widely as an organic fertilizer in gardening. Synthetic dye wastewaters made from 4 different commercial grade dyes were used in batch and column laboratory studies and the scope included batch pH/kinetic/isotherm and subsequent column studies for particular dye-adsorbent combinations that demonstrated promise during batch studies. The Langmuir, Freundlich and BET isotherm models were tested for their applicability and the column data were analyzed utilizing the Thomas equation. It was found that the surface charge on the adsorbent and the solution pH play an important role in affecting the capacity of the adsorbent and, as a result, peat was more effective in adsorption of basic rather than acid dyes. It was also observed that the disperse dye removal by peat was better than that by GAC.

# Title: American Family Physician

Full Journal Title: [American Family Physician](http://www.aafp.org/online/en/home/publications/journals/afp/afpsearch.html)

ISO Abbreviated Title: Am. Fam. Physician

JCR Abbreviated Title: Am Fam Physician

ISSN: 0002-838X

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Acad Family Physicians

Publisher Address: 8880 Ward Parkway, Kansas City, MO 64114-2797

Subject Categories:

Medicine, General & Internal: Impact Factor

? Guidotti, T.L. and Conway, J.B. (1984), Water and health. *American Family Physician*, **30** (4), 97-104.

Full Text: Ame Fam Phy30, 97.pdf

Abstract: The systems protecting the quality of drinking water in the United States are deteriorating. Many urban water and sewer systems are obsolete. Industrial wastes are imposing a burden on wastewater treatment facilities. In the U.S., outbreaks of water-borne disease are primarily limited to enteritis associated with viruses or *Giardia*. Issues in the contamination of drinking water by toxic substances include disposal practices, accidental contamination, agricultural runoff and chlorination byproducts. Physicians must support stringent enforcement of water quality standards.

? Koutkia, P., Mylonakis, E. and Flanigan, T. (1997), Enterohemorrhagic *Escherichia coli* O157: H7-an emerging pathogen. *American Family Physician*, **56** (3), 853-6, 859-61.

Full Text: Ame Fam Phy56, 853.pdf

Abstract: Enterohemorrhagic *Escherichia coli* O157: H7 has become an important public health problem in recent years, causing more than 20,000 cases of infection and up to 250 deaths per year in the United States. Transmission of infection is most commonly linked to consumption of undercooked ground beef, contaminated drinking water or unpasteurized milk. Patients with this infection most often present with an acute onset of diarrhea and abdominal cramping that progresses over days to bloody stools. The most serious complications of E. coli O157: H7 infection include hemolytic-uremic syndrome and thrombotic thrombocytopenic purpura. Hemolytic-uremic syndrome occurs most often in children less than five years of age and the elderly, while thrombotic thrombocytopenic purpura occurs only in adults. Detection of E. coli O157: H7 requires specific testing that is not performed in routine stool cultures. All patients with documented infection require close observation for the development of possible complications. Use of antibiotics and antimotility agents may worsen the course of the infection and should be avoided.

? Cayley, W.E. (2005), Pharmacologic cardioversion for atrial fibrillation and flutter. *American Family Physician*, **72** (11), 2217-2219.

Full Text: 2005\Ame Fam Phy72, 2217.pdf

Abstract: Background. Atrial fibrillation is the most common cardiac dysrhythmia. It is associated with significant morbidity and mortality. There are two approaches to the management of atrial fibrillation: controlling the ventricular rate or converting to sinus rhythm in the expectation that this would abolish its adverse effects. Objectives. To assess the effects of pharmacologic cardioversion of atrial fibrillation in adults on the annual risk of stroke, peripheral embolism, and mortality. Search Strategy. The authors’ searched the Cochrane Controlled Trials Register (issue 3, 2002), MEDLINE (2000 to 2002), EMBASE (1998 to 2002), CINAHL (1982 to 2002), and Web of Science (1981 to 2002). They hand searched the following journals (all 1997 to 2002): Circulation, Heart, European Heart Journal, and Journal of the American College of Cardiology, and selected abstracts published on the Web site of the North American Society of Pacing and Electrophysiology (2001, 2002). Selection Criteria. Randomized controlled trials or controlled clinical trials of pharmacologic cardioversion versus rate control in adults (older than 18 years) with acute, paroxysmal, or sustained atrial fibrillation or atrial flutter, of any duration and of any etiology. Data Collection and Analysis. One reviewer applied the inclusion criteria and extracted the data. Trial quality was assessed and the data were entered into RevMan. Primary Results. The authors identified two completed studies: AFFIRM(2) (n = 4,060) and PIAF(3) (n = 252). The authors found no difference in mortality between rhythm control and rate control (relative risk = 1.14; 95% confidence interval, 1.00 to 1.31). Both studies showed significantly higher rates of hospitalization and adverse events in the rhythm-control group and no difference in quality of life between the two treatment groups. In AFFIRM, there was a similar incidence of ischemic stroke, bleeding, and systemic embolism in the two groups. Certain malignant dysrhythmias were significantly more likely to occur in the rhythm-control group. There were similar scores of cognitive assessment. In PiAF, cardio-verted patients enjoyed an improved exercise tolerance, but there was no overall benefit in terms of symptom control or quality of life. Reviewers’ Conclusions. The authors conclude that there is no evidence that pharmacologic cardioversion of atrial fibrillation to sinus rhythm is superior to rate control. Rhythm control is associated with more adverse effects and increased hospitalization, and it does not reduce the risk of stroke. This conclusion cannot be generalized to all persons with atrial fibrillation. Most of the patients included in these studies were older than 60 years and had significant cardiovascular risk factors.

Keywords: Adults, Adverse Effects, Assessment, Authors, Cardiology, Cardiovascular, Cardiovascular Risk, Clinical Trials, Cochrane, Control, Controlled Clinical Trials, Embase, Etiology, Exercise, Hospitalization, Journal, Journals, Management, Medline, Morbidity, Mortality, Primary, Quality of Life, Randomized Controlled Trials, Relative Risk, Rhythm, Risk, Risk Factors, Science, Stroke, Treatment, Web of Science

? Roskos, S.E. (2006), Vaccines for preventing influenza in healthy children. *American Family Physician*, **74** (7), 1123-1125.

Full Text: 2006\Ame Fam Phy74, 1123.pdf

Abstract: Background: In children and adults, the consequences of influenza mainly are absences from school and work; however, the risk of complications is greatest in children and in persons older than 65 years. Objectives: To appraise all comparative studies evaluating the effects of influenza vaccines in healthy children, to assess vaccine efficacy (i.e., prevention of confirmed influenza) and effectiveness (i.e., prevention of influenza-like illness), and to document adverse events associated with receiving influenza vaccines. Search Strategy: The reviewers’ searched the Cochrane Central Register of Controlled Trials (CENTRAL, Cochrane Library Issue 1, 2005), OLD MEDLINE (1966 to 1969), MEDLINE (1969 to December 2004), EMBASE (1974 to December 2004), Biological Abstracts (1969 to December 2004), and Science Citation Index (1974 to December 2004). They wrote to vaccine manufacturers and a number of corresponding authors of studies in the review. Selection Criteria: Any randomized controlled trials (RCTs) and cohort or case-control studies of any influenza vaccine in healthy children younger than 16 years. Data Collection and Analysis: Two authors independently assessed trial quality and extracted data. Primary Results: Fifty-one studies involving a total of 263,987 children were included. Seventeen papers were translated from Russian. Fourteen RCTs and 11 cohort studies were included in the analysis of vaccine efficacy and effectiveness. From RCTs, live vaccines showed an efficacy of 79 percent (95% confidence interval [CI], 48 to 92) and an effectiveness of 33 percent (95% Cl, 28 to 38) in children older than two years compared with placebo or no intervention. Inactivated vaccines had a lower efficacy (59 percent; 95% Cl, 41 to 71) than live vaccines but similar effectiveness (36 percent; 95% Cl, 24 to 46). In children younger than two years, the efficacy of inactivated vaccine was similar to placebo. Thirty-four reports containing safety outcomes were included: 22 of live vaccines, eight of inactivated vaccines, and four of both types. The most commonly presented short-term outcomes were temperature and local reactions. The variability in design of studies and presentation of data was such that meta-analysis of safety outcome data was not feasible. Reviewers’ Conclusions: Influenza vaccines are efficacious in children older than two years, but little evidence is available for children younger than two years. There was a marked difference between vaccine efficacy and effectiveness. That no safety comparisons could be carried out emphasizes the need for standardization of methods and presentation of vaccine safety data in future studies. It was surprising to find only one study of inactivated vaccine in children younger than two years given recent recommendations to vaccinate healthy children from six months of age in the United States and Canada. If immunization in children is to be recommended as public health policy, large-scale studies assessing important outcomes and directly comparing vaccine types are urgently required.

Keywords: Case-Control, Citation, Cohort, MEDLINE, Meta-Analysis, Review, Science Citation Index, Temperature

? Hitzeman, N. and Masley, C. (2008), Arthroscopic surgery for knee osteoarthritis. *American Family Physician*, **78** (3), 331-332.

Full Text: 2008\Ame Fam Phy78, 331.pdf

Abstract: Background: Knee osteoarthritis is a progressive disease that initially affects the articular cartilage. Observational studies have shown benefits for arthroscopic debridement on the osteoarthritic knee, but other recent studies have yielded conflicting results that suggest arthroscopic debridement may not be effective. Objectives: To identify the effectiveness of arthroscopic debridement in knee osteoarthritis on pain and function. Search Strategy: The authors searched the Cochrane Central Register of Controlled Trials (The Cochrane Library Issue 2, 2006), Medline (1966 to August 2006), CINAHL (1982 to 2006), EMBASE (1988 to 2006), and Web of Science (1900 to 2006), and screened the bibliographies, reference lists, and cited Web sites of papers. Selection Criteria: The authors included randomized controlled trials (RCTs) or controlled clinical trials assessing effectiveness of arthroscopic debridement compared with another surgical procedure (including sham or placebo surgery and other nonsurgical interventions) in patients with a diagnosis of primary or secondary osteoarthritis of the knee who did not have other joint involvement or conditions requiring long-term use of nonsteroidal anti-inflammatory drugs. The main outcomes were pain relief and improved function of the knee. Data Collection and Analysis: Two review authors independently selected trials for inclusion, assessed trial quality, and extracted the data. Results are presented using weighted mean difference for continuous data and relative risk for dichotomous data, as well as the number needed to treat (NNT) and the number needed to harm (NNH). Main Results: Three RCTs, with a total of 271 patients, were included. They had different comparison groups and a moderate risk of bias. One study compared arthroscopic debridement with lavage and with sham surgery. The study found no significant difference when compared with lavage. Compared with sham surgery, the study found worse outcomes for arthroscopic debridement at two weeks (weighted mean difference for pain = 8.7; 95% confidence interval [CI], 1.7 to 15.8; function = 7.7; 95% Cl, 1.1 to 14.3; NNH = 5) and no significant difference at two years. The second trial, at higher risk of bias, compared arthroscopic debridement with arthroscopic washout and found that arthroscopic debridement significantly reduced knee pain compared with washout at five years (relative risk = 5.5; 95% Cl, 1.7 to 15.5; NNT = 3). The third trial, also at higher risk of bias, compared arthroscopic debridement with closed-needle lavage and found no significant difference. Authors’ Conclusions: There is high-quality evidence that arthroscopic debridement has no benefit for typical osteoarthritis of the knee (mechanical or inflammatory causes).

Keywords: Authors, Bias, Clinical Trials, Cochrane, Controlled Clinical Trials, Diagnosis, Disease, Effectiveness, EMBASE, Interventions, Involvement, Outcomes, Pain, Papers, Primary, Randomized Controlled Trials, Relative Risk, Review, Risk, Science, Surgery, Surgical, Web of Science

? Hitzeman, N. and Dyer, A. (2010), Influenza vaccination of health care personnel working with older patients. *American Family Physician*, **82** (7), 763-764.

Full Text: [2010\Ame Fam Phy82, 763.pdf](2010/Ame%20Fam%20Phy82,%20763.pdf)

Abstract: Background: Health care personnel influenza rates are unknown, but may be similar to the general public and they may transmit influenza to patients. Objectives: To identify studies of vaccinating personnel and the incidence of influenza, its complications, and influenza-like illness in patients 60 years and older in long-term care facilities. Search Strategy: We searched CENTRAL (The Cochrane Library 2009, issue 3), which contains the Cochrane Acute Respiratory Infections Group’s Specialised Register, Medline (1966 to 2009), EMBASE (1974 to 2009), and Biological Abstracts and Science Citation Index-Expanded. Selection Criteria: Randomized controlled trials (RCTs) and non-RCTs of influenza vaccination of personnel caring for patients 60 years and older in long-term care facilities and the incidence of laboratory-proven influenza, its complications, or influenza-like illness. Data Collection and Analysis: Two authors independently extracted data and assessed risk of bias. Main Results: We identified four cluster-RCTs (C-RCTs; n = 7,558) and one cohort (n = 12,742) of influenza vaccination for personnel caring for patients 60 years and older in long-term care facilities. Pooled data from three C-RCTs showed no effect on specific outcomes: laboratory-proven influenza, pneumonia, or deaths from pneumonia. For nonspecific outcomes, pooled data from three C-RCTs showed personnel vaccination reduced influenza-like illness; data from one C-RCT showed that personnel vaccination reduced primary care consultations for influenza-like illness; and pooled data from three C-RCTs showed reduced all-cause mortality in patients 60 years and older. Authors’ Conclusions: No effect was shown for specific outcomes: laboratory-proven influenza, pneumonia, and death from pneumonia. An effect was shown for the nonspecific outcomes of influenza-like illness, primary care consultations for influenza-like illness, and all-cause mortality in patients 60 years and older. These nonspecific outcomes are difficult to interpret because influenza-like illness includes many pathogens, and winter influenza contributes less than 10 percent to all-cause mortality in patients 60 years and older. The key interest is preventing laboratory-proven influenza in patients 60 years and older, pneumonia, and deaths from pneumonia, and we cannot draw such conclusions. The identified studies are at high risk of bias. Some health care personnel remain unvaccinated because they do not perceive risk, doubt vaccine effectiveness, and are concerned about adverse effects. This review did not find information on co-interventions with personnel vaccination: hand washing, face masks, early detection of laboratory-proven influenza, quarantine, avoiding admissions, antivirals, and asking personnel with influenza-like illness not to work. We conclude there is no evidence that vaccinating personnel prevents influenza in older residents in long-term care facilities. High-quality RCTs are required to avoid risks of bias in methodology and conduct, and to test these interventions in combination.

Keywords: Citation, Science Citation Index Expanded

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Subject Categories:

Plant Sciences: Impact Factor 0.302, 113/137 (2000)

Seiler, R.L. (1981), Leaf turnover rates and natural history of the central American tree fern Alsophila salvinii. *American Fern Journal*, **71** (3), 75-81.

Full Text: [1981\Ame Fer J71, 75.pdf](1981/Ame%20Fer%20J71,%2075.pdf)

Lucansky, T.W. (1985), Anatomical studies of sphaeropteris and cnemidaria (*Cyatheaceae*). *American Fern Journal*, **75** (3), 80-91.

Full Text: [1985\Ame Fer J75, 80.pdf](1985/Ame%20Fer%20J75,%2080.pdf)

Cox, P.A. and Tomlinson, P.B. (1985), Relationships between ecological pattern and branching in the tree fern *Lophosoria quadripinnata* in Veracruz, Mexico. *American Fern Journal*, **75** (4), 105-110.

Full Text: [1985\Ame Fer J75, 105.pdf](1985/Ame%20Fer%20J75,%20105.pdf)

Smith, A.R. and Grayum, M.H. (1988), *Cyathea stolzei X ursina*, a distinctive tree fern hybrid from Costa Rica. *American Fern Journal*, **78** (3), 105-108.

Full Text: [1988\Ame Fer J78, 105.pdf](1988/Ame%20Fer%20J78,%20105.pdf)

Medeiros, A.C., Loope, L.L., Flynn, T., Anderson, S.J., Cuddihy, L.W. and Wilson, K.A. (1992), Notes on the status of an invasive Australian tree fern (*Cyathea Cooperi*) in Hawaiian rain forests. *American Fern Journal*, **82** (1), 27-33

Full Text: [1992\Ame Fer J82, 27.pdf](1992/Ame%20Fer%20J82,%2027.pdf)

Bittner, J. and Breckle, S.W. (1995), The growth-rate and age of tree fern trunks in relation to habitats. *American Fern Journal*, **85** (2), 37-42.

Full Text: [1995\Ame Fer J85, 37.pdf](1995/Ame%20Fer%20J85,%2037.pdf)

Seiler, R.L. (1995), Verification of estimated growth rates in the tree fern *Alsophila salvinii*. *American Fern Journal*, **85** (3), 96-97.

Full Text: [1995\Ame Fer J85, 96.pdf](1995/Ame%20Fer%20J85,%2096.pdf)

Arens, N.C. and Smith, A.R. (1998), *Cyathea planadae*, a remarkable new creeping tree fern from Colombia, South America. *American Fern Journal*, **88** (2), 49-59.

Full Text: [1998\Ame Fer J88, 49.pdf](1998/Ame%20Fer%20J88,%2049.pdf)

Abstract: A new species within the Cyathaceae is described from the mid-elevation cloud forests of the Andes in southwestern Colombia. *Cyathea planadae* N.C. Arens & A.R. Smith has fragile, ephemeral, sphaeropteroid indusia surrounding inframedial to medial sori, which are typical of many *Cyathea*; however it is unusual in possessing a creeping stem. Decumbent stems (above-ground rhizomes) bearing adventitious roots and buds give rise to narrow, glabrous upright shoots upon which three or four twice-pinnate-pinnatified fronds are typically displayed. *Cyathea planadae* is very common and patchily distributed in the understory of primary forest habitats in montane forests. The species is also noteworthy for an apparent association with an ant species, which appears to feed from pads of tissue at the base of the pinnae.

Keywords: Genus

Arens, N.C. and Baracaldo, P.S. (1998), Distribution of tree ferns (Cyatheaceae) across the successional mosaic in an Andean cloud forest, Nariño, Colombia. *American Fern Journal*, **88** (2), 60-71.

Full Text: [1998\Ame Fer J88, 60.pdf](1998/Ame%20Fer%20J88,%2060.pdf)

Abstract: Approximately eleven species of tree ferns (Cyatheaceae, Dicksonia, and Lophosoria) occur in the cloud forest of La Reserva Natural La Planada, Narino, Colombia. We used 500 m2, (50×10 m) plots, 10 each in primary forest, secondary forest, and abandoned pasture, to measure the density and species distribution of tree ferns. Abandoned pasture and secondary forest had approximately equal tree fern densities, with density in primary forest significantly lower. Species richness was highest in secondary forest due to the mixture of early and late successional species. Pasture and secondary forest habitats were dominated by Cyathea caracasana; higher diversity recorded in abandoned pasture is due to high relative abundances of two subordinate species: Lophosoria quadripinnata and Dicksonia sellowiana. Primary forest was dominated by a single species, Cyathea planadae, with very low relative abundance of the other species recorded. The dominance transition during regeneration appears to begin after approximately 20 years of regrowth, suggesting that the disturbance mosaic and the resulting environmental heterogeneity in Andean forests is important in maintaining species diversity in tree ferns. Two recommendations for conservation emerge: 1) Conservation of tree fern diversity depends on the maintenance of a variety of successional habitats within the forest; 2) Tree ferns are an important component of species that colonize abandoned open sites in Andean forests. Their rapid growth rate and preference for open habitat suggest that some tree fern species may be useful in restoration strategies in cloud forests.

Keywords: Alsophila-Salvinii, Growth, Demography, Rates

? Arens, N.C. and Baracaldo, P.S. (2000), Variation in tree fern stipe length with canopy height: Tracking preferred habitat through morphological change. *American Fern Journal*, **90** (1), 1-15.

Full Text: [2000\Ame Fer J90, 1.pdf](2000/Ame%20Fer%20J90,%201.pdf)

Abstract: Cyathea caracasana is a common open-habitat tree fern in the Andes of Colombia. In full sun, stem growth rates are high (up to 2 cm/month) and individuals regularly produce spores. However, even the fastest growing ferns are overtopped by woody angiosperms after 10 to 15 years of natural forest regeneration. As individuals are overtopped, C. caracasana produces nearly vertical fronds with long stipes (commonly over 3 m) apparently to place the photosynthetic surface into the canopy. We compared stipe length and blade length and width among individuals growing in open sites and in the understories of two regenerating forests: one with a canopy of 20-25 m, and one with a canopy of 5-8 m. Stipes and blades were shortest in open habitat and longest in the low-canopy forest. Ferns in the high-canopy forest had intermediate measurements. Despite the change in frond length, the number of primary pinnae per-frond did not differ among the habitats sampled. This suggests that elongation cues are received late in the development of the frond. This conclusion is supported by a positive relationship between stipe length and the distance of the fern meristem below the canopy. Because both understory populations show stipe elongation relative to open-hapitat ferns, the cue to elongate is likely a low red/far-red wavelength ratio of the light received by the apical meristem. Extraordinary elongation is probably made possible by extra carbon resources available to low-canopy plants, which still have leaves in full sun. This sense and response mechanism allows individual plants to produce elongated fronds as their apical meristems are overtopped. Functionally, the long-stiped plants remain in full sun even after they are overtopped, thus they “track” their preferred, open habitat.

Keywords: Far-Red Light, Induced Spore Germination, Phenotypic Plasticity, Alsophila-Salvinii, Rain-Forest, Blue-Light, Radiation, Growth, Environment, Elongation

Durand, L.Z. and Goldstein, G. (2001), Growth, leaf characteristics, and spore production in native and invasive tree ferns in Hawaii. *American Fern Journal*, **91** (1), 25-35.

Full Text: [A\Ame Fer J91, 25.pdf](A/Ame%20Fer%20J91,%2025.pdf)

Abstract: The Australian tree fern Sphaeropteris cooperi is an invasive species in Hawaiian wet forests where it displaces Cibotium, the dominant native Hawaiian tree fern. where they co-occur. This study was undertaken in order to assess the relative growth rates and reproductive potential of S. cooperi and the native Cibotium species. Field measurements of growth rates, fertile frond production and leaf traits were made monthly over the course of one gear. Sphaeropteris cooped had a significantly higher growth rate, both in terms of height increase and frond production, and maintained four times more fronds than the native Cibotium species. The mean annual height increase of the invasive tree fern was 15 cm compared to 2 to 3 cm for the native tree ferns. The leaf mass per area of S. cooperi was significantly lower than that of the native Cibotium species, and the leaf life span was significantly shorter, suggesting that the cost of construction of the invasive species’ fronds was relatively low. Sphaeropteris cooperi also produced significantly more fertile fronds per month than the native tree ferns. These differences in life history characteristics may help explain the rapid spread and success of S. cooperi in Hawaii.

Keywords: Life-Span, Plant

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? Eisenberg, M.J. (1992), Magnesium deficiency and sudden death. *American Heart Journal*, **124** (2), 544-549.

Full Text: [1992\Ame Hea J124, 544.pdf](1992/Ame%20Hea%20J124,%20544.pdf)

Keywords: Acute Myocardial-Infarction, Ischemic Heart-Disease, Water Hardness, Cardiovascular Mortality, Intravenous Magnesium, Drinking-Water, Arrhythmias, Sulfate, Hypomagnesemia, Potassium

? Hovens, M.M.C., Snoep, J.D., Eikenboom, J.C.J., van der Bom, J.G., Mertens, B.J.A. and Huisman, M.V. (2007), Prevalence of persistent platelet reactivity despite use of aspirin: A systematic review. *American Heart Journal*, **153** (2), 175-181.

Full Text: [2007\Ame Hea J153, 175.pdf](2007/Ame%20Hea%20J153,%20175.pdf)

Abstract: Background The absolute risk of recurrences among patients using aspirin for prevention of cardiovascular events remains high. Persistent platelet reactivity despite aspirin therapy might explain this in part. Reported prevalences of this so-called aspirin resistance vary widely, between 0% and 57%. Objectives The aim of the study was to systematically review all available evidence on prevalence of aspirin resistance and to study determinants of reported prevalence. Methods Using a predefined search strategy, we searched electronic databases MEDLINE, EMBASE, CENTRAL, and Web of Science. To be included in our analysis, articles had to contain a laboratory definition of aspirin resistance, use aspirin as secondary prevention, and report associated prevalence. Results We included 34 full-text articles and 8 meeting abstracts. The mean prevalence of aspirin resistance was 24% (95% Cl 20%-28%). After adjustment for differences in definition, used dosage, and population, a statistically significant higher prevalence was found in studies with aspirin dosage <= 100 mg compared with >= 300 mg (36% [95% Cl 28%-43%] vs 19% [95% Cl 11%-26%], P < .0001). Studies measuring platelet aggregation using light aggregometry with arachidonic acid as an agonist had a pooled unadjusted prevalence of 6% (95% Cl 0%-12%). In studies using point-of-care platelet function-analyzing devices, the unadjusted prevalence was significantly higher, at 26% (95% Cl 21%-31%). Conclusions Prevalences widely differ between studies reporting on aspirin resistance. Both aspirin dosage and the method of defining aspirin resistance strongly influence estimated prevalence, which explains found heterogeneity among studies. On average, it appears that about 1 in 4 individuals may express biochemically defined aspirin resistance.

Keywords: Analysis, Antiplatelet Therapy, Cardiovascular, Cardiovascular-Disease, Coronary-Artery-Disease, Databases, Determinants, EMBASE, Function Analyzer, Healthy-Individuals, IIIA Polymorphism, Ischemic Stroke, Low-Dose Aspirin, Medline, Methods, Myocardial-Infarction, Prevalence, Prevention, Resistance, Resistance In-Vitro, Review, Risk, Science, Secondary Prevention, Strategy, Systematic, Systematic Review, Therapy, Web of Science

? Oreopoulos, A., Padwal, R., Kalantar-Zadeh, K., Fonarow, G.C., Norris, C.M. and McAlister, F.A. (2008), Body mass index and mortality in heart failure: A meta-analysis. *American Heart Journal*, **156** (1), 13-22.

Full Text: [2008\Ame Hea J156, 13.pdf](2008/Ame%20Hea%20J156,%2013.pdf)

Abstract: Background In patients with chronic heart failure (CHF), previous studies have reported reduced mortality rates in patients with increased body mass index (BMI). The potentially protective effect of increased BMI in CHF has been termed the obesity paradox or reverse epidemiology. This meta-analysis was conducted to examine the relationship between increased BMI and mortality in patients with CHF. Methods We searched the Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, Scopus, and Web of Science to identify studies with contemporaneous control groups (cohort, case-control, or randomized controlled trials) that examined the effect of obesity on all-cause and cardiovascular mortality. Two reviewers independently assessed studies for inclusion and performed data extraction. Results Nine observational studies met final inclusion criteria (total n = 28,209). Mean length of follow-up was 2.7 years. Compared to individuals without elevated BMI levels, both overweight (BMI similar to 25.0-29.9 kg/m(2), RR 0.84, 95% CI 0.79-0.90) and obesity (BMI similar to >= 30 kg/m(2), RR 0.67, 95% CI 0.62-0.73) were associated with lower all-cause mortality. Overweight (RR 0.81, 95% CI 0.72-0.92) and obesity (RR 0.60, 95% CI 0.53-0.69) were also associated with lower cardiovascular mortality. In a risk-adjusted sensitivity analysis, both obesity (adjusted HR 0.88, 95% CI 0.83-0.93) and overweight (adjusted HR 0.93, 95% CI 0.89-0.97) remained protective against mortality. Conclusions Overweight and obesity were associated with lower all-cause and cardiovascular mortality rates in patients with CHF and were not associated with increased mortality in any study. There is a need for prospective studies to elucidate mechanisms for this relationship.

Keywords: Analysis, Bmi, Body Mass Index, Cachexia, Cardiovascular, Cochrane, Control, Control Groups, EMBASE, Epidemiology, Follow-up, Hypothesis, Medline, Meta-Analysis, Methods, Morbidity, Mortality, Natriuretic Peptide, Obesity, Obesity Paradox, Observational Studies, Overweight, Prognosis, Prospective Studies, Randomized Controlled Trials, Reverse Epidemiology, Risk-Factors, Science, Scopus, Tumor-Necrosis-Factor, Web of Science, Weight-Loss

? Tleyjeh, I.M., Kashour, T., Zimmerman, V., Steckeelberg, J.M., Wilson, W.R. and Baddour, L.M. (2008), The role of valve surgery in infective endocarditis management: A systematic review of observational studies that included propensity score analysis. *American Heart Journal*, **156** (5), 901-909.

Full Text: [2008\Ame Hea J156, 901.pdf](2008/Ame%20Hea%20J156,%20901.pdf)

Abstract: Background The potential role of valve surgery in infective endocarditis (IE) management is controversial. No randomized trials have been conducted to date; accordingly, some studies use propensity score analysis (PSA) to minimize selection bias in observational studies. Methods A systematic review of the literature addressing the role of valve surgery in IE was performed. Studies in which PSA was applied to the management of IE were identified using Medline, Web of Science, Zetoc, and Article First from inception to June 2007. Cohort studies that compared valve surgery (combined with antimicrobial therapy) to antimicrobial therapy alone and used PSA to adjust for selection bias were eligible. Methodological details and outcomes were compared to assess methodclogical quality. Results Six cohort studies that enrolled a total of 3,409 patients with either native valve endocarditis (NVE) or prosthetic valve endocarditis (PVE) were eligible. The proportions of IE cases undergoing valve surgery ranged from 28.9% to 41.7% for PVE and from 20.8% to 49.3% for NVE. Two studies suggested a statistically significant survival benefit with surgery in patients with NVE Data from 2 other patient cohorts (PVE and NVE) revealed conflicting results. No statistically significant associations were found in the remaining studies. Conclusions There am several limitations of available cohort studies that assess the role of valve surgery in IE. Well-designed prospective siudies that address these limitations ore needed to further define the role of surgery in IE. Until then, careful scrutiny is warranted when making management decisions in complicated, left-sided IE. (Am Heart J 2008; 156:901-9.).

Keywords: 6-Month Mortality, Adults, Analysis, Antimicrobial Therapy, Association, Bias, Cohort, Cohort Studies, Endocarditis, Impact, Instrumental Variables, Literature, Management, Methods, Observational Studies, Outcomes, Propensity Score, Review, Science, Selection Bias, Stroke, Surgery, Survival, Systematic, Systematic Review, Therapy, Web of Science

? Mommersteeg, P.M.C., Denollet, J., Spertus, J.A. and Pedersen, S.S. (2009), Health status as a risk factor in cardiovascular disease: A systematic review of current evidence. *American Heart Journal*, **157** (2), 208-218.

Full Text: [2009\Ame Hea J157, 208.pdf](2009/Ame%20Hea%20J157,%20208.pdf)

Abstract: Background Patient-perceived health status is receiving increased recognition as a patient-centered outcome in chronic heart failure (CHF) and coronary artery disease (CAD), but poor health status is also associated with adverse prognosis. In this systematic review, we examined current evidence on the influence of health status on prognosis in CHF and CAD. Methods We conducted a search of PubMed using a set of a priori-defined search terms, the Web of Science for newly cited articles, and the reference lists of eligible articles, resulting in 34 articles. Results Poor physical health status was a significant predictor for adverse health outcomes inpatients with CHF and CAD. In CHF, poor physical health status seemed to be a stronger predictor of hospitalization than mortality. Little evidence was found that poor mental health status is associated with adverse prognosis in CHF and CAD. A disease-specific measure was a better predictor in CHF, but not in CAD. The majority of studies adjusted for an objective measure of disease severity. Neither the index event nor time to follow-up appeared to influence the predictive value of health status. Conclusions Poor physical health status is associated with adverse CAD and CHF prognosis. Heterogeneity across studies makes definitive conclusions difficult as to which components of health status may be detrimental to patients’ health, and how health status as a potential risk factor should be assessed, monitored, and intervened upon in clinical practice. (Am Heart J 2009; 157:208-18.).

Keywords: Bypass Graft-Surgery, Cardiac Patients, Cardiovascular, Cardiovascular Disease, Chronic Heart-Failure, Coronary-Artery-Disease, Disease, Elderly-Patients, Follow-up, Health, Health Outcomes, Health Status, Hospitalization, Mental Health, Methods, Mortality, Myocardial-Infarction, Outcome, Outcomes, Practice, Prognosis, Prognostic Value, Pubmed, Quality-of-Life, Review, Risk, Science, Self-Rated Health, Systematic, Systematic Review, Web of Science

? Siontis, G.C.M., Tatsioni, A., Katritsis, D.G. and Ioannidis, J.P.A. (2009), Persistent reservations against contradicted percutaneous coronary intervention indications: Citation content analysis. *American Heart Journal*, **157** (4), 695-701.

Full Text: [2009\Ame Hea J157, 695.pdf](2009/Ame%20Hea%20J157,%20695.pdf)

Abstract: Background Two large trials, Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation (COURAGE) and Occluded Artery Trial (OAT), found no benefits of percutaneous coronary intervention (PCI) versus optimal medical therapy in chronic stable coronary artery disease and chronic total occlusion. Methods We examined the stance of articles citing COURAGE and OAT to determine whether some authors continue to defend PCI despite this evidence, what persisting counterarguments are raised to express reservations, and whether specific characteristics of the citations are associated with reservations. We evaluated all citing articles entered in the Web of Science until February 1, 2008. Specific characteristics were recorded for each eligible citation, and a citation content analysis was performed. Counterarguments were categorized on participants, interventions, comparisons, and outcomes. Results Of 54 articles citing COURAGE and 33 articles citing OAT, 10 (19%) and 5 (15%), respectively, had an overall reserved stance. Alluded reservations included lack of power, eroded effects from crossover, selective inclusion and exclusion of specific types of patients, suboptimal clinical setting, use of bare-metal stents, suspiciously good results in the conservative treatment arm, and suboptimal outcome choices or definitions. Reserved articles were more likely than unreserved ones to have an interventional cardiologist as corresponding author (odds ratio 5.2, 95% confidence interval 1.6-17.1; P = .007) and to be commentaries focusing on one of these trials (odds ratio 3.3, 95% confidence interval 1.0-11.0; P = .05). Conclusions Despite strong randomized evidence, a fraction of the literature, mostly corresponded by interventional cardiologists, continues to raise reservations about recently contradicted indications of PCI. (Am Heart J 2009; 157:695-701.).

Keywords: Analysis, Author, Authors, Bare Metal Stents, Chronic Total Occlusions, Citation, Citations, Clinical-Outcomes, Content Analysis, Coronary Artery Disease, Courage Trial, Definitions, Disease, Evaluation, Intervention, Interventions, Late Reperfusion, Literature, Medical, Medical Therapy, Methods, Myocardial-Infarction, Open-Artery Hypothesis, Outcome, Outcomes, Patients, PCI, Percutaneous Coronary Intervention, Power, Randomized Controlled-Trials, Ratio, Science, Stable Angina, Therapy, Treatment, Web of Science

? Poggio, R., Arazi, H.C., Giorgi, M. and Miriuka, S.G. (2010), Prediction of severe cardiovascular events by VE/Vco2 slope versus peak Vo2 in systolic heart failure: A meta-analysis of the published literature. *American Heart Journal*, **160** (6), 1004-1014.

Full Text: [2010\Ame Hea J160, 1004.pdf](2010/Ame%20Hea%20J160,%201004.pdf)

Abstract: Background Peak VO(2) has traditionally been used for prognostic evaluation in systolic heart failure. However, in the past years, VE/VCO(2) slope has been shown to be similar or even superior in many studies. We performed a systematic review and a meta-analysis of diagnostic studies of VE/VCO(2) slope to assess its ability to predict cardiovascular events in systolic heart failure. Methods We searched the published literature in PubMed and ISI Web of Science for VE/VCO(2) slope in heart failure, and performed a systematic review and a meta-analysis of diagnostic studies in articles fulfilling previously established selection criteria. End points were serious cardiovascular events defined as death or the combined end point of death, ventricular assist device implantation, or heart transplant. A sub-analysis was also performed with those articles providing enough data to compare VE/VCO(2) slope prognostic ability to that of peak VO(2). Results Four hundred ninety-one articles that are potentially relevant were identified, and 12 studies were selected based on our predefined criteria. No heterogeneity or evidence of publication bias was found. The 12 studies included a total of 2,628 patients with a mean follow-up of 31 months (95% CI 16-46 months). The combined event rate at 1 year was 11.2% (95% CI 7.8%-14.6%). Diagnostic odds ratio and area under the curve for serious cardiovascular events were 5.02 (95% CI 4.06-6.21) and 0.75 (95% CI 0.72-0.78), respectively. Six studies provided sufficient data for VE/VCO(2) slope and peak VO(2) comparison. Both variables showed similar performance, although VE/VCO(2) did present a trend to superiority. Conclusions In this meta-analysis, VE/VCO(2) slope represents a reasonable ability to predict serious cardiovascular events in systolic heart failure, and is at least as effective as peak VO(2). (Am Heart J 2010;160:1004-14.).

Keywords: Ambulatory Patients, Beta-Blocker Therapy, Bias, Brain Natriuretic Peptide, Cardiovascular, Care, Death, Evaluation, Exercise Oxygen-Consumption, Follow-up, ISI, Literature, Meta-Analysis, Methods, Mortality, Points, Prediction, Prognostic Value, Publication, Publication Bias, Pubmed, Ratio, Review, Science, Survival, Systematic, Systematic Review, Trend, Ventilatory Efficiency, Web of Science

# Title: American Historical Review

Full Journal Title: American Historical Review

ISO Abbreviated Title:

Jcr Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Blum, C. (2001), On Jean-Jacques Rousseau: Considered as one of the first authors of the revolution. *American Historical Review*, **106** (3), 927-928.

Full Text: [2001\Ame His Rev106, 927.pdf](2001/Ame%20His%20Rev106,%20927.pdf)

# Title: American Industrial Hygiene Association Journal

Full Journal Title: [American Industrial Hygiene Association Journal](http://www.informaworld.com/smpp/title~db=all~content=t713608243~tab=issueslist); [American Industrial Hygiene Association Journal](http://vnweb.hwwilsonweb.com/hww/Journals/getIssues.jhtml?sid=HWW:OMNIS&id=-4659)

ISO Abbreviated Title: Am. Ind. Hyg. Assoc. J.

JCR Abbreviated Title: Am Ind Hyg Assoc J

ISSN: 0002-8894

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Industrial Hygiene Assoc

Publisher Address: 2700 Prosperity Ave #250, Fairfax, VA 22031-4307

Subject Categories:

Environmental Sciences: Impact Factor 0.862, 56/126 (1999); Impact Factor 0.565, 81/127 (2000); Impact Factor 0.658, 76/129 (2001)

Public, Environmental & Occupational Health: Impact Factor 0.862, 53/85 (1999); Impact Factor 1.691, 7/54 (2000); Impact Factor 0.658, 64/88 (2001)

? Woolrich, P.F. (1973), Occurrence of trace metals in the environment: An overview. *American Industrial Hygiene Association Journal*, **34** (5), 217-226.

? Wilcosky, T.C., Checkoway, H., Marshall, E.G. and Tyroler, H.A. (1984), Cancer mortality and solvent exposures in the rubber industry. *American Industrial Hygiene Association Journal*, **45** (12), 809-811.

Wood, G.O. and Moyer, E.S. (1991), A review and comparison of adsorption-isotherm equations used to correlate and predict organic vapor cartridge capacities. *American Industrial Hygiene Association Journal*, **52** (6), 235-242.

Abstract: Four adsorption isotherm equations for describing measured capacities of organic vapor air-purifying cartridges were compared. Experimental breakthrough curves were measured for five organic vapors: ethanol, carbon tetrachloride, acetone, chloroform, and hexane. Plots of service life at 1 % breakthrough versus bed weight (stacked cartridges) yielded capacities over concentration ranges for three brands of cartridges. The Freundlich, Langmuir, Dubinin/Radushkevich, and Hacskaylol LeVan isotherm equations fit the capacity versus vapor concentration data equally well, except in the case of ethanol. The ethanol fir was worse for the Freundlich equation. Other characteristics of these equations were related to their usefulness for correlating service life.

Keywords: Kinetics, Model

Verma, D.K., Julian, J.A., Roberts, R.S., Muir, D.C.F., Jadon, N. and Shaw, D.S. (1992), Polycyclic aromatic-hydrocarbons (PAHs): A possible cause of lung-cancer mortality among nickel copper smelter and refinery workers. *American Industrial Hygiene Association Journal*, **53** (5), 317-324.

Kawar, K.H. and Underhill, D.W. (1999), Effect of relative humidity on the adsorption of selected water-miscible organic vapors by activated carbon. *American Industrial Hygiene Association Journal*, **60** (6), 730-736.

Abstract: The adsorptive capacity of activated charcoal was determined experimentally for the vapors of 2-ethoxyethanol, pyridine, acetic acid, and piperidine from dry air and from air saturated with water vapor. Vapor concentrations ranged from 100 mg/m3 to at least 1000 mg/m3; the temperature was kept constant at 25°C. The reduction in the adsorptive capacity of the activated charcoal by the relative humidity over the entire range of experimental conditions was accounted for by the Hansen-Fackler modification of the Dubinin-Radushkevich equation. This procedure allows the use of the activity coefficients, which are basic thermodynamic factors often available in the literature, to estimate the effect of adsorbed moisture on the adsorption of these organic compounds from a humidified atmosphere.

Keywords: Adsorption, Activated Carbon, Isotherm, Relative Humidity, Moisture, Organic Compounds

? Wood, G.O. and Moyer, E.S. (1991), A review and comparison of adsorption-isotherm equations used to correlate and predict organic vapor cartridge capacities. *American Industrial Hygiene Association Journal*, **52** (6), 235-242.

Full Text: 1991\Ame Ind Hyg Ass J52, 235.pdf

Abstract: Four adsorption isotherm equations for describing measured capacities of organic vapor air-purifying cartridges were compared. Experimental breakthrough curves were measured for five organic vapors: ethanol, carbon tetrachloride, acetone, chloroform, and hexane. Plots of service life at 1 % breakthrough versus bed weight (stacked cartridges) yielded capacities over concentration ranges for three brands of cartridges. The Freundlich, Langmuir, Dubinin/Radushkevich, and Hacskaylol LeVan isotherm equations fit the capacity versus vapor concentration data equally well, except in the case of ethanol. The ethanol fir was worse for the Freundlich equation. Other characteristics of these equations were related to their usefulness for correlating service life.

Keywords: Adsorption, Adsorption Isotherm, Breakthrough, Capacity, Carbon, Ethanol, Freundlich, Freundlich Equation, Isotherm, Kinetics, Langmuir, Model, Weight

# Title: American Institute of Physics Conference Proceedings

Full Journal Title: [AIP Conference Proceedings](http://weblinks1.epnet.com/authHjafDetail.asp?tb=1&_ua=bo+B%5F+shn+1+db+aphjnh+bt+TD++%22KV6%22+9E78&_ug=sid+7F06AD4E%2D0895%2D4145%2D9FCF%2D1F087DF358AC%40sessionmgr2+dbs+aph+E972&_us=frn+21+or+Date+ss+SO+sm+KS+sl+%2D1+dstb+KS+mh+1+ri+KAAACBZD000)

ISO Abbreviated Title: AIP Conf. Proc.

JCR Abbreviated Title:

ISSN: 0094-243X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hossain, M.A., Kumita, M. and Mori, S. (2004), Sorption dynamics of Cr(VI) on used black tea leaves. *American Institute of Physics Conference Proceedings*, **708** (1), 394-397.

Abstract: Sorptionefficiency of Cr(VI) on used black tea leaves from aqueoussolutions was evaluated. Kinetic studies were conducted using a batchprocess, and the effects of Cr(VI) concentration, solution pH andtemperature on the adsorption and reduction performance were investigated. Theadsorption kinetics follows pseudo-second order rate equation better than pseudo-firstorder one. The rate constant of pseudo-second order adsorption decreaseswith increasing an initial concentration of Cr(VI), up to acertain limit, then becomes steady. The maximum value of therate constant was observed at an initial solution pH = 1.3. The rate constant was found to linearly increase withan increase in temperature, showing that the process is endothermic.The activation energy of adsorption calculated from Arrhenius plot is16.3 kJ/mol, indicating that the adsorption occurred easily. ©2004 AmericanInstitute of Physics

# Title: American Journal of Acupuncture

Full Journal Title: American Journal of Acupuncture

ISO Abbreviated Title:

Jcr Abbreviated Title:

ISSN: 0091-39

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hu, J.H. (1974), Therapeutic effects of acupuncture - Review. *American Journal of Acupuncture*, **2** (1), 8-14.

? Rabinowitz, N. (1987), Acupuncture and the AIDS epidemic - Reflections on the treatment of 200 patients in 4 years. *American Journal of Acupuncture*, **15** (1), 35-42.

# Title: American Journal of Agricultural Economics

Full Journal Title: American Journal of Agricultural Economics

ISO Abbreviated Title:

Jcr Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Beilock, R. and Polopolus, L. (1988), Ranking of agricultural-economics departments: Influence of regional journals, joint authorship, and self-citations. *American Journal of Agricultural Economics*, **70** (2), 403-409.

Full Text: [1988\Ame J Agr Eco70, 403.pdf](1988/Ame%20J%20Agr%20Eco70,%20403.pdf)

Abstract: Citations are increasingly used to indicate the quality of an academic unit’s work. The set of literature or journals, however, becomes crucial to any ranking scheme. Citations from the broadly based Social Science Citations Index suggest a different ranking of departments than the ranking obtained from a somewhat narrowly focused set of North American journals of agricultural economics. The paper seeks to determine the influence of regional journals, joint authorship, and self-citations on departmental rankings. Data bases of citations are developed for the faculty of seventy-three departments of agricultural economics in the United States and Canada.

Keywords: Authorship, Ranking

Graff, G.D. (2003), Observing technological trajectories in patent data: Empirical methods to study the emergence and growth of new technologies. *American Journal of Agricultural Economics*, **85** (5), 1266-1274.

Full Text: [2003\Ame J Agr Eco85, 1266.pdf](2003/Ame%20J%20Agr%20Eco85,%201266.pdf)

? Hilmer, C.E. and Hilmer, M.J. (2005), How do journal quality, co-authorship, and author order affect agricultural economists’ salaries? *American Journal of Agricultural Economics*, **87** (2), 509-523.

Full Text: [2005\Ame J Agr Eco87, 509.pdf](2005/Ame%20J%20Agr%20Eco87,%20509.pdf)

Abstract: Utilizing an original data set containing annual salaries and peer-reviewed publication histories for 326 faculty members from top-ranked Ph.D.-granting programs, we examine the labor market for academic agricultural economists. The results suggest that higher quality publications have a greater impact on annual earnings, that sole authored articles have a higher return than multi-authored articles, and that no wage premium exists for being the lead author of a non-alphabetic article.

Keywords: Allocation, Author, Author Order, Citations, Co-Authorship, Departments, Discipline, Discrimination, Faculty Salaries, Gender, Lead, Production of Science, Profession, Promotion, Publication, Publications, Seniority

# Title: American Journal of Alzheimer’s Disease and Other Dementias

Full Journal Title: American Journal of Alzheimer’s Disease and Other Dementias

ISO Abbreviated Title:

Jcr Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Henry, G., Williamson, D. and Tampi, R.R. (2011), Efficacy and tolerability of antidepressants in the treatment of behavioral and psychological symptoms of dementia, a literature review of evidence. *American Journal of Alzheimer’s Disease and Other Dementias*, **26** (3), 169-183.

Full Text: [2011\Ame J Alz Dis Oth Dem26, 169.pdf](2011/Ame%20J%20Alz%20Dis%20Oth%20Dem26,%20169.pdf)

Abstract: The objective of this review is to summarize the current data on the use of antidepressants in the treatment of behavioral and psychological symptoms of dementia (BPSD) and to determine whether these medications can be recommended for routine clinical use. A literature search of six major databases (PubMed, Medline, PsychINFO, Scopus, Web of Science and Cochrane collaboration) trials, 8 using a selective serotonin reuptake inhibitor (SSRI) compound and 3 using trazodone showed benefit in the treatment of BPSD. The antidepressant drug was well tolerated in at least 14 of the 19 trials with information about tolerability in one trial not provided in the study (paroxetine or placebo for FTD). This review indicates that antidepressants can be an effective in the treatment of BPSD and are generally well tolerated in elderly demented patients.

Keywords: Alzheimers-Disease, Antidepressants, Behavioral and Psychological Symptoms of Dementia, BPSD, Cochrane, Collaboration, Controlled Clinical-Trial, Databases, Dementia, Disturbances, Double-Blind, Drug, Efficacy, Elderly, Frontotemporal Dementia, Information, Literature, Literature Review, Neuropsychiatric Symptoms, Placebo, Psychological, Psychotic Symptoms, PUBMED, Randomized-Controlled-Trial, Review, Science, Scopus, Selective Serotonin Reuptake Inhibitors, Serotonin, Sertraline, Symptoms, Trazodone, Treatment, Web of Science

# Title: American Journal of Applied Sciences

Full Journal Title: [American Journal of Applied Sciences](http://www.scipub.org/scipub/c4p.php?j_id=ajas)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1546-9239 (Print)

ISSN: 1554-3641 (Online)

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mahvi, A.H., Maleki, A. and Eslami, A. (2004), Potential of rice husk and rice husk ash for phenol removal in aqueous systems. *American Journal of Applied Sciences*, **1** (4), 321-326.

Full Text: [2004\Ame J App Sci1, 321.pdf](2004/Ame%20J%20App%20Sci1,%20321.pdf)

Abstract: The potential of rice husk and rice husk ash for phenol adsorption from aqueous solution was studied. Batch kinetics and isotherm studies were carried out under varying experimental conditions of contact time, phenol concentration, adsorbent dose and pH. Adsorption equilibrium of rice husk and rice husk ash was reached within 6 hr for phenolic concentration 150-500 µg/L and 3 hr for phenol concentration 500-1300 µg/L, respectively. Kinetics of adsorption obeyed a first-order rate equation. The adsorption of phenol increases with increasing the solution pH value. The suitability of the Freundlich and Langmuir adsorption models to the equilibrium data were investigated for each phenol-sorbent system. The results showed that the equilibrium data for all the phenol-sorbent systems fitted the Freundlich model best within the concentration range studied. A comparative study showed that rice husk ash is very effective than rice husk for phenol removal. The studies showed that the rice husk ash can be used as an efficient adsorbent material for removal of phenolic from water and wastewater.

? Mahvi, A.H., Naghipour, D., Vaezi, F. and Nazmara, S. (2005), Teawaste as an adsorbent for heavy metal removal from industrial wastewaters. *American Journal of Applied Sciences*, **2** (1), 372-375.

Full Text: [2005\Ame J App Sci2, 372.pdf](2005/Ame%20J%20App%20Sci2,%20372.pdf)

Abstract: Water used in industries creates a wastewater that has a potential hazard for our environment because of introducing various contaminants such as heavy metals into soil and water resources. In this study, removal of cadmium, lead and nickel from industrial wastewaters has been investigated by using teawaste as a natural adsorbent. The research is a bench scale experimental type and analyses have performed by using different amounts of adsorbent in solutions with 5 different concentrations of each metal and also in a mixed combination. Besides, the effect of various amounts of teawaste used in adsorption efficiency experiments has been investigated. Results indicate that the removal efficiency is highest for lead and is minimum for cadmium. About 94 and 100% lead removal were achieved by using 0.5 and 1.5g adsorbent for solutions having concentrations of 5 and 10 mg/L Pb. Whereas, 1.5g teawaste can treat nickel solution of 5 mg/L concentration with an efficiency of not more that 85.7%. For cadmium, the efficiency was only 77.2% in the same conditions. On the other hand, for mixtures of metals and by applying 0.5 g teawaste, we considered a 3.5% decrease in lead removal efficiency and a 13.2% decrease in nickel adsorption for a mixed solution of 5 mg/L.

? Azhar, S.S., Liew, A.G., Suhardy, D., Hafiz, K.F. and Hatim, M.D.I. (2005), Dye removal from aqueous solution by using adsorption on treated sugarcane bagasse. *American Journal of Applied Sciences*, **2** (11), 1499-1503.

Full Text: [2005\Ame J App Sci2, 1499.pdf](2005/Ame%20J%20App%20Sci2,%201499.pdf)

Abstreact: The use of cheap and ecofriendly adsorbents have been studied as an alternative substitution of activated carbon for the removal dyes from wastewater. Adsorbents prepared from sugarcane baggase-an agro industries waste were successfully used to remove the methyl red from an aqueous solution in a batch reactor. This study investigates the potential use of sugarcane baggase, pretreated with formaldehyde (PCSB) and sulphuric acid (PCSBC), for the removal of methyl red from simulated wastewater. Formaldehyde treated and sulphuric acid treated sugarcane bagasse were used to adsorb methyl red at varying dye concentration, adsorbent dosage, pH and contact time. Similar experiment was conducted with commercially available powdered activated carbon (PAC), in order to evaluate the performance of PCSB and PCSBC. The adsorption efficiency of different adsorbents was in the order PAC>PCSBC>PCSB. The initial pH of 6-10 flavours the adsorption of both PCSB and PCSBC. Adsorbents are very efficient in decolorized diluted solution. It is proposed that PCSB and PCSBC, in a batch or stirred tank reactors could be employed as a low cost alternative in wastewater treatment for the dyes removal.

? Mohd Nasir, N.F., Mohd Zain, N., Raha, M.G. and Kadri, N.A. (2005), Characterization of chitosan-poly (ethylene oxide) blends as haemodialysis membrane. *American Journal of Applied Sciences*, **2** (12), 1578-1583.

Full Text: [2005\Ame J App Sci2, 1578.pdf](2005/Ame%20J%20App%20Sci2,%201578.pdf)

Abstract: Blend membranes of chitosan and poly (ethylene oxide) with different molecular weights of 100,000 and 600,000 were prepared by the solution cast technique. The chitosan-PEO blends membranes were produced to study their water adsorptions capacity and characteristics for haemodialysis membrane application. An increase in the water adsorption capacity of chitosan-PEO blend membranes compared to the pure chitosan was due to the porous structure as evident from the scanning electron micrograph. Addition of PEO with higher molecular weight had reduced the percentage of water adsorption of the chitosan-PEO blend membranes. XRD results revealed that chitosan-PEO blend membrane with higher water adsorption ability shows lesser degree of amorphosity. Intermolecular interactions between chitosan and higher molecular PEO chains in the blend contributed to important alteration in chitosan structure as observed in the infrared spectroscopy which lessens the permeability of the membrane.

? Omar, W. and Al-Itawi, H. (2007), Removal of Pb+2 ions from aqueous solutions by adsorption on kaolinite clay. *American Journal of Applied Sciences*, **4** (7), 439-443.

Full Text: [2007\Ame J App Sci4, 439.pdf](2007/Ame%20J%20App%20Sci4,%20439.pdf)

Abstract: The adsorption potential of the kaolinite clay for the removal of lead ions from aqueous solutions was tested. The measured adsorption isotherms at the different temperatures 298.15 K, 308.15 K and 318.15 K were found to be perfectly fit to the Langmuir isotherm equation. A high adsorption capacity was calculated. An increase in the retention capacity with increasing temperature was measured. The adsorption process was found to be endothermic with an estimated mean enthalpy change of 135.2 kJ/mol. The measured adsorption kinetic data at different temperatures proved that not only intraparticle diffusion controls the adsorption process but also surface adsorption contributes to the control of rate of adsorption. The influence of pH in the acidic range was investigated. The measured increase in the adsorption rate at higher pH values (4.9) was explained through the influence of H+ ions on the complex ion formation.

? Omar, W. and Al-Itawi, H. (2007), Removal of Pb+2 ions from aqueous solutions by adsorption on kaolinite clay. *American Journal of Applied Sciences*, **4** (7), 502-507.

Full Text: [2007\Ame J App Sci4, 502.pdf](2007/Ame%20J%20App%20Sci4,%20502.pdf)

Abstract: The adsorption potential of the kaolinite clay for the removal of lead ions from aqueous solutions was tested. The measured adsorption isotherms at the different temperatures 298.15 K, 308.15 K and 318.15 K were found to be perfectly fit to the Langmuir isotherm equation. A high adsorption capacity was calculated. An increase in the retention capacity with increasing temperature was measured. The adsorption process was found to be endothermic with an estimated mean enthalpy change of 135.2 kJ/mol. The measured adsorption kinetic data at different temperatures proved that not only intraparticle diffusion controls the adsorption process but also surface adsorption contributes to the control of rate of adsorption. The influence of pH in the acidic range was investigated. The measured increase in the adsorption rate at higher pH values (4.9) was explained through the influence of H+ ions on the complex ion formation.

# Title: American Journal of Biochemistry and Biotechnology

Full Journal Title: [American Journal of Biochemistry and Biotechnology](http://www.scipub.org/scipub/c4p.php?j_id=ajbb)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Pandey, A., Bera, D., Shukla, A. and Ray, L. (2007), Potential of agarose for biosorption of Cu(II) in aqueous system. *American Journal of Biochemistry and Biotechnology*, **3** (2), 55-59.

Full Text: [2007\Ame J Bio Bio3, 55.pdf](2007/Ame%20J%20Bio%20Bio3,%2055.pdf)

Abstract: The ability of agarose gel as an adsorbent for Cu(II) ions in aqueous solution was studied. The experiments were done as batch processes. Batch kinetics and isotherm studies were carried out under varying experimental conditions of contact time, Cu(II) ion concentration, adsorbent dose, temperature and pH. Adsorption equilibrium of agarose gel was reached within 4 h for agarose gel when initial metal ion concentration was 25 mg/l, while at higher concentration 175 mg/l equilibrium was achieved in 6 h. Kinetics of adsorption obeyed a pseudo second-order equation. The optimum sorbent loading was found to be 1% for Cu(II) removal. The biosorption of Cu(II) ions by agarose gel decreased as the initial concentration of metal ions increased in the medium. The maximum Cu(II) ions adsorbed was found to be 238 mg/g agarose gel. The maximum uptake of metal ions was obtained at pH 2.0. At temperature 35°C, the biosorption of metal ions was found to be highest, with increase or decrease in temperature resulted in a decrease in the metal ions uptake capacity. The suitability of the Langmuir and Freundlich adsorption models to the equilibrium data were investigated and it was found that the sorption data conformed well to Langmuir isotherm model. The studies showed that the agarose gel can be used as an efficient adsorbent biopolymer for removal of Cu(II) ions from water and wastewater.

Keywords*:* Biosorption, Agarose Gel, Biopolymer, Cu(II) adsorption, Aqueous System

# Title: American Journal of Bioethics

Full Journal Title: American Journal of Bioethics

ISO Abbreviated Title:

Jcr Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Smith, E. and Boulanger, R. (2011), What about author order and acknowledgments? Suggestions for additional criteria for conceptual research in bioethics. *American Journal of Bioethics*, **11** (10), 24-26.

Full Text: [2011\Ame J Bio11, 24.pdf](2011/Ame%20J%20Bio11,%2024.pdf)

Keywords: Research

# Title: American Journal of Botany

Full Journal Title: [American Journal of Botany](http://uk.jstor.org/browse/00029122?frame=noframe&userID=527bfbc0@ic.ac.uk/018258cb3a95110217e8942d&dpi=3&config=jstor)

ISO Abbreviated Title: Am. J. Bot.

JCR Abbreviated Title: Am J Bot

ISSN: 0002-9122

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Botanical Soc Amer Inc

Publisher Address: Ohio State Univ-Dept Botany, 1735 Neil Ave, Columbus, OH 43210

Subject Categories:

Plant Sciences: Impact Factor 2.350, 17/137 (2000)

Barrington, D.S. (1983), Cibotium-oregonense: An eocene tree-fern stem and petioles with internal structure. *American Journal of Botany*, **70** (8), 1118-1124.

Full Text: [A\Ame J Bot70, 1118.pdf](A/Ame%20J%20Bot70,%201118.pdf)

Rothwell, G.W. (1991), Botryopteris Forensis (Botryopteridaceae), a trunk epiphyte of the tree fern Psaronius. *American Journal of Botany*, **78** (6), 782-788.

Full Text: [A\Ame J Bot78, 782.pdf](A/Ame%20J%20Bot78,%20782.pdf)

Abstract: Basal parts of Botryopteris forensis have been discovered rooted within the mantle of the tree fern Psaronius. Specimens occur in Upper Pennsylvanian coal balls from near Steubenville, Ohio, USA. The Botryopteris stems branch profusely, and these shoots are intertwined with the Psaronius roots near the surface of the mantle. They also produce adventitious roots that extend among the Psaronius roots. This material demonstrates that B. forensis was a trunk epiphyte, rather than a rhizomatous terrestrial fern. The B. forensis plant is interpreted to have branched continuously, to ramify, and to maintain itself at the periphery of the growing mantle of Psaronius roots. A new reconstruction of B. forensis is offered showing the large, globose fructifications hanging pendulously from horizontal fronds on emergent shoots. Epiphytes and lianas are common on the trunks of Psaronius, indicating that some Marattiales did not produce leaf skirts.

Keywords: Filicales

Clark, D.B., Clark, D.A. and Grayum, M.H. (1992), Leaf demography of a Neotropical rain forest cycad, Zamia-Skinneri (Zamiaceae). *American Journal of Botany*, **79** (1), 28-33.

Full Text: [A\Ame J Bot79, 28.pdf](A/Ame%20J%20Bot79,%2028.pdf)

Abstract: Tropical rain forest understories are extremely light-limited environments. Little is known about the demography of leaves in these habitats. To determine leaf longevity and causes of mortality for a species in the understory of a neotropical rain forest, we studied 634 leaves on 173 individuals of the cycad shrub Zamia skinneri for 10 yr at the La Selva Biological Station, Costa Rica. Five different seasonal cohorts of leaves were followed. No significant differences among cohorts were found in median leaf longevity, but the cohorts did differ in the proportion of leaves dying in annual intervals from < 1 to greater-than-or-equal-to 6 yr. Median minimum time alive for all leaves was 4.6 yr. Epiphyll coverage increased from 0% in the first year of life to 75%-100% by year 4. Leaf mortality was well described by two separate exponential functions, approximately 10% mortality/yr until year 4, then abruptly increasing to ca. 51%/yr. of 625 leaf deaths, 77.0% were due to unexplained causes, 16.5% to physical damage by falling litter, 4.8% to attacks by larvae of the lycaenid butterfly Eumaeus minyas, and 1.8% to other causes. Leaf longevity was positively correlated with leaf size. Individuals of Z. skinneri frequently survive more than a century in very dark understory conditions. We suggest that leaf longevity in these circumstances is determined by the inevitable deterioration in leaf carbon balance due to leaf aging and increasing epiphyll coverage, and by loss due to physical damage and attacks by the specialist herbivore.

Keywords: Photosynthetic Light Environments, Tropical Tree-Fern, Costa-Rica, Understory, Seedlings, Patterns, Turnover, Ecology, Growth, Palms

Arens, N.C. (2001), Variation in performance of the tree fern *Cyathea caracasana* (Cyatheaceae) across a successional mosaic in an Andean cloud forest. *American Journal of Botany*, **88** (3), 545-551.

Full Text: Ame J Bot88, 545

Abstract: In Andean forests, *Cyathea caracasana* grows across a range of successional habitats. This study documents variation in several measures of plant performance (stem growth, leaf production, leaf longevity, and spore production) in *C. caracasana* growing in open habitat, low-canopy secondary forest, and high-canopy secondary forest, based on 33 mo of observation. In open habitat, *C. caracasana* displayed significantly higher growth rates, leaf production rates, and leaf turnover than in either of the forested habitats. The highest rates of spore production were also observed in open-habitat individuals with only one plant in the forest understory producing spores during the study. Despite low growth and no reproduction, I observed no mortality among ferns in the forest understory. These data show that C, caracasana performs best under conditions of full sun but can persist under the closed canopy. This suggests a life history in which periods of rapid growth, spore production, and recruitment in forest gaps alternate with low growth rate and persistence in the understory. A phylogenetic perspective suggests that the habitat flexibility, which might conventionally mark *C. caracasana* as a habitat generalist, is better interpreted as specialization for the dynamic forest in which it grows.

Keywords: Cloud Forest, *Cyathea*, *Cyatheaceae*, Generalist, Habitat, Specialist, Succession, Tree Fern, Responses, Colombia, Habitat

# Title: American Journal of Cardiology

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? Gorkin, L., Norvell, N.K., Rosen, R.C., Charles, E., Shumaker, S.A., Mcintyre, K.M., Capone, R.J., Kostis, J., Niaura, R., Woods, P., Hosking, J., Garces, C., Handberg, E., Ahern, D.K. and Follick, M.J. (1993), Assessment of quality-of-life as observed from the base-line data of the studies of left-ventricular dysfunction (SOLVD) trial quality-of-life substudy. *American Journal of Cardiology*, **71** (12), 1069-1073.

Full Text: [1993\Ame J Car71, 1069.pdf](1993/Ame%20J%20Car71,%201069.pdf)

Abstract: The improvement of aspects of a patient’s quality of life may be as important as prolonging survival in evaluating clinical trials of heart failure. The purpose of this study was to analyze the psychometric properties of the baseline measures from the quality-of-life substudy from the Studies of Left Ventricular Dysfunction (SOLVD) trial. The measures included the 6-Minute Walk Test, Dyspnea Scale, Living with Heart Failure, Physical Limitations, Psychologic Distress and Health Perceptions, as reported by both patients and staff. Cognitive functioning, such as Vocabulary, Digit Span and Trails Making, was also assessed. Patients were classified as New York Heart Association class I (n = 158) versus II or III (n = 150). The internal consistencies (i.e., reliabilities) of the self-report measures were high, except for the Health Perceptions of Class II or III patients. Reliability of the SOLVD quality-of-life battery was confirmed by significantly better life quality among New York Heart Association class I patients versus class II or III patients combined on the Walk Test, Physical Limitations, Dyspnea, Living with Heart Failure, Psycholologic Distress and staff perceptions of patient health. In accordance with prior studies, the measures were uncorrelated with left ventricular ejection fraction. By demonstrating strong internal consistencies, reliability based on physician reports, and independence of ejection fraction levels, use of this quality-of-life assessment battery in this and other clinical trials of compromised ventricular functioning is supported.

Keywords: Chronic Heart-Failure, Exercise Capacity, Walking Test, Performance, Indexes, Dyspnea

? Jeevanantham, V., Ntim, W., Navaneethan, S.D., Shah, S., Johnson, A.C., Hall, B., Shah, A., Hundley, W.G., Daubert, J.P. and Fitzgerald, D. (2010), Meta-analysis of the effect of radiofrequency catheter ablation on left atrial size, volumes and function in patients with atrial fibrillation. *American Journal of Cardiology*, **105** (9), 1317-1326.

Full Text: [2010\Ame J Car105, 1317.pdf](2010/Ame%20J%20Car105,%201317.pdf)

Abstract: The effects of radiofrequency catheter ablation (RFCA) on left atrial (LA) size, volumes, and function in patients with atrial fibrillation (AF) are not well understood. The aim of this study was to systematically review the effects of RFCA on LA size, volumes, and function in patients with AF. Medline, the Web of Science, the Cochrane Central Register of Controlled Trials, and the reference lists of retrieved reports were searched for relevant studies through April 2009. Studies conducted in patients with AF were included if their primary outcomes were changes in LA size or volumes and/or function before and after RFCA. Weighted mean differences for changes in LA diameter, LA maximum volume, LA minimum volume, LA ejection fraction, and LA active emptying fraction were estimated using fixed- and random-effects meta-analyses. Seventeen relevant studies (enrolling 869 patients) among 192 identified studies were included in the final analysis. Compared to preablation values, there were significant decreases in LA diameter and LA volumes at postablation follow-up. However, compared to preablation values, there were no significant differences in LA ejection fraction and LA active emptying fraction at postablation follow-up. Decreases in LA diameter and LA volumes remained significant in those without AF recurrence but not in those with AF recurrence. LA ejection fraction and LA active emptying fraction did not decrease in patients without AF recurrence, whereas they decreased in patients with AF recurrence. In conclusion, successful RFCA in patients with AF significantly decreases LA size and volumes and does not seem to adversely affect LA function. (C) 2010 Elsevier Inc. All rights reserved. (Am J Cardiol 2010;105:1317-1326).

Keywords: Analysis, Cochrane, Dysfunction, Exercise Capacity, Follow-up, Heart-Failure, Outcomes, Primary, Pulmonary Veins, Recurrence, Review, Science, Time 3-Dimensional Echocardiography, Web of Science

? Petretta, M., Pirozzi, F., Sasso, L., Paglia, A. and Bonaduce, D. (2011), Review and Metaanalysis of the frequency of familial dilated cardiomyopathy. *American Journal of Cardiology*, **108** (8), 1171-1176.

Full Text: [2011\Ame J Car108, 1171.pdf](2011/Ame%20J%20Car108,%201171.pdf)

Abstract: Several studies have investigated the frequency of familial dilated cardiomyopathy (FDC). However, no systematic review and meta-analysis on this topic are available. Therefore, using the PubMed, MEDLINE, Cochrane, and the ISI Web of Science databases, relevant reports published through December 2010 were identified. For the summation of prevalence findings, prevalence point estimates and 95% confidence intervals were computed using the logit transformation formula. An aggregate estimate of clinically confirmed FDC of 23% (95% confidence interval 0.17 to 0.31) was found. However, the prevalence rates reported across these studies varied widely, ranging from 2% to 65%, and the analysis showed very high heterogeneity (Q = 295, p <0.001, I(2) = 93%). Meta regression analysis between logit event rate and year of publication explained 23% of between-study variance (p <0.05). Cumulative meta-analysis confirmed the influence of year of publication on the reported prevalence of FDC among the different studies. However, most of the observed heterogeneity may be explained by the fact that the various studies used different preselected criteria for the diagnosis of FDC. In conclusion, data obtained from trials performed using standardized criteria are needed to better define the true prevalence of FDC. (C) 2011 Elsevier Inc. All rights reserved. (Am J Cardiol 2011;108: 1171-1176).

Keywords: Aggregation, Analysis, Bias, Children, Cochrane, Confidence Intervals, Congestive Cardiomyopathy, Databases, Diagnosis, Dilated Cardiomyopathy, Frequency, ISI, ISI Web of Science, Medline, Meta Analysis, Meta-Analysis, Prevalence, Publication, Pubmed, Regression Analysis, Relatives, Review, Science, Society, Statement, Systematic, Systematic Review, Transplantation, Web of Science

? Zhang, S.N., Ge, J.B., Yao, K. and Qian, J.Y. (2011), Meta-analysis of early versus deferred revascularization for non ST-segment elevation acute coronary syndrome. *American Journal of Cardiology*, **108** (9), 1207-1213.

Full Text: [2011\Ame J Car108, 1207.pdf](2011/Ame%20J%20Car108,%201207.pdf)

Abstract: The impact of a coronary revascularization strategy (early or deferred) on clinical outcomes of non-ST-segment elevation acute coronary syndrome (NSTE-ACS) has not been well established. The goal of this study was to systematically review randomized trials comparing early to deferred revascularization for NSTE-ACS. A systematic literature search of MEDLINE, ISI Web of Science, and Cochrane databases was conducted. Two reviewers independently determined the eligibility of clinical trials. Five trials with 4,155 patients were included for analysis. Meta-analysis showed that early revascularization produced no significant differences in the incidence of death (risk ratio [RR] 0.88, p = 0.47), recurrent myocardial infarction (RR 0.92, p = 0.58), and repeat revascularization compared to a deferred intervention. However, a significant decrease in refractory ischemia was observed in the early intervention group (RR 0.47, p<0.01), and the procedure also showed a tendency toward decreasing major bleeding events (RR 0.77, p = 0.08). According to stratification based on intervention era, extent of revascularization, and time of revascularization, subgroup analysis did not show between-group differences in all-cause mortality, recurrent myocardial infarction, and major bleeding events. Also, sensitivity analysis by alternatively using a random-effects model did not find any relevant influence on overall results in direction and magnitude. In conclusion, meta-analysis demonstrated that early coronary revascularization is feasible and safe for patients with NSTE-ACS, might markedly decrease the incidence of refractory ischemia, and appears to produce less bleeding. (C) 2011 Elsevier Inc. All rights reserved. (Am J Cardiol 2011;108:1207-1213).

Keywords: Acute, Acute Coronary Syndrome, Analysis, Angiography, Angioplasty, Catheterization, Clinical Trials, Cochrane, Databases, Differences, Guidelines, Immediate, Impact, Incidence, Intervention, Invasive Management, Ischemia, ISI, ISI Web of Science, Literature, Medline, Meta Analysis, Meta-Analysis, Model, Mortality, Myocardial Infarction, Outcomes, Patients, Randomized-Trial, Ratio, Review, Risk, Science, Sensitivity, Strategy, Systematic, Web of Science

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? Hernandez, A.V., Usmani, A., Rajamanickam, A. and Moheet, A. (2011), Thiazolidinediones and risk of heart failure in patients with or at high risk of type 2 diabetes mellitus a meta-analysis and meta-regression analysis of placebo-controlled randomized clinical trials. *American Journal of Cardiovascular Drugs*, **11** (2), 115-128.

Full Text: 2011\Ame J Car Dru11, 115.pdf

Abstract: Background: Recent meta-analyses of randomized clinical trials (RCTs) demonstrated a higher risk of heart failure (HF) with the use of thiazolidinediones (TZDs). However, this effect may have been diluted by including active controls. Also, it is uncertain whether the risk of HF is similar with rosiglitazone and pioglitazone. Objectives: This study quantified the risks of HF with the use of TZDs in patients with or at high risk of developing type 2 diabetes mellitus (DM), and evaluated differential effects by type of TZD. Secondarily, we evaluated risks of peripheral edema. Methods: We performed a systematic review and meta-analysis of placebo-controlled RCTs evaluating the effect of rosiglitazone or pioglitazone on investigator-reported HF and edema. Articles published before 31 December 2009 were searched in MEDLINE, The Web of Science, and Scopus, and the data were extracted by three investigators. RCTs with >= 100 patients and >= 3 months of follow-up were included. We quantified the effect of TZDs as odds ratios (ORs) by using the Mantel-Haenzel and alternative models. We further evaluated the risk of serious/severe HF, and the effect of several trial characteristics on HF risk by subgroup analysis and meta-regression analysis. Results: 29 trials (n = 20 254) were evaluated. TZDs were significantly associated with HF (TZD 360/6807 [5.3%] vs placebo 234/6328 [3.7%], OR 1.59; 95% CI 1.34, 1.89; p <0.00001). The risk of HF was higher with rosiglitazone than with pioglitazone (2.73 [95% CI 1.46, 5.10] vs 1.51 [1.26, 1.81]; p = 0.06). TZDs were associated with a similar risk of serious/severe HF (OR 1.47; 95% CI 1.16, 1.87; p = 0.002). Use of TZDs was also associated with edema (OR 2.04; 95% CI 1.85, 2.26; p < 0.00001). HF and edema risks were consistent using Peto and random effects models. Risks of HF were significantly high for the subgroups of trials including patients with or at high risk for type 2 DM, and for the subgroup of trials with >= 12 months of follow-up. Meta-regression analysis showed that trials with lower overall baseline risk had higher HF risks. Conclusion: In placebo-controlled trials of adult patients with or at high risk for type 2 DM, TZD therapy is significantly and consistently associated with a higher risk of HF. The risk of serious/severe HF is also increased with the use of TZDs. HF risks are similar to those of meta-analyses combining active- and placebo-controlled trials. The benefit/risk profile of TZDs should be considered when treating diabetic patients with or without prior HF.

Keywords: Adult, Analysis, Articles, Cardiovascular Events, Clinical Trials, Combination Therapy, Diabetes, Diabetes Mellitus, Double-Blind, Follow-up, Improves Glycemic Control, Insulin Therapy, Medline, Meta-Analysis, Methods, Myocardial-Infarction, Parallel-Group, Pioglitazone Hydrochloride, Profile, Randomized Clinical Trials, Review, Risk, Rosiglitazone, Science, Scopus, Sulfonylurea Monotherapy, Systematic, Systematic Review, Therapy, Type 2, Type 2 Diabetes, Type 2 Diabetes Mellitus, Web of Science

# Title: American Journal of Chemical Engineering

? Hutchins, R.A. (1973), New simplified design of activated carbon systems. *American Journal of Chemical Engineering*, **80**, 133-138.

# Title: American Journal of Clinical Nutrition

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? Adlercreutz, H., Honjo, H., Higashi, A., Fotsis, T., Hamalainen, E., Hasegawa, T. and Okada, H. (1991), Urinary excretion of lignans and isoflavonoid phytoestrogens in Japanese men and women consuming a traditional Japanese diet. *American Journal of Clinical Nutrition*, **54** (6), 1093-1100.

Full Text: [1991\Ame J Cli Nut54, 1093.pdf](1991/Ame%20J%20Cli%20Nut54,%201093.pdf)

Abstract: Epidemiologic studies revealed low mortality in hormone-dependent cancer in Japanese women and men consuming a traditional diet. We previously found that certain diphenolic food components, lignans and isoflavonoids, which are converted to biologically active hormone-like substances by intestinal microflora, may be cancer-protective agents. Therefore, we studied urinary excretion of these compounds (enterolactone, enterodiol, daidzein, equol, and O-desmethylangolensin) in 10 women and 9 men in a rural village south of Kyoto, Japan. The subjects consumed a typical low-fat diet with much rice and soy products, fish, and vegetables. An isotope-dilution gas chromatographic-mass spectrometric method was used for the assays. The urinary excretion of lignans was low but that of the isoflavonoids was very high. The excretion of isoflavonoids correlated with soybean-product intake. The low mortality in breast and prostate cancer of Japanese women and men, respectively, may be due to the high intake of soybean products.

Keywords: Japanese, Diet, Urine, Lignans, Isoflavonoids, Enterolactone, Enterodiol, Daidzein, Equol, Genistein, O-Desmethylangolensin, Soybean, Gas Chromatography, Mass Spectrometry, Sex-Hormone Binding Globulin, Kinase Inhibitor Genistein, Post-Menopausal Women, Breast-Cancer Cells, Tyrosine-Kinase, Omnivorous Women, Prostate-Cancer, Possible Roles, Binding-Sites, Rat-Liver, Vegetarian

Fitzgerald, D.J. (1998), Safety guidelines for copper in water. *American Journal of Clinical Nutrition*, **67** (5), 1098S-1102S.

Full Text: [1998\Ame J Cli Nut67, 1098S.pdf](1998/Ame%20J%20Cli%20Nut67,%201098S.pdf)

Abstract: It is important for public health authorities to set a scientifically sound guideline value for the safe ingestion of copper in drinking water. To date, the principal health-based guideline values have been set by the US Environmental Protection Agency (1.3 mg Cu/L) and the World Health Organization (2.0 mg Cu/L). However, close examination of the data and assumptions used in the derivation of these values reveals a paucity of scientifically defensible information. Several international groups are now reviewing this issue, and others have begun epidemiologic studies that may provide useful copper exposure and toxicity data. Investigations of acute copper toxicity in human populations are most likely to affect future revisions of the guideline value for copper in drinking water.

Keywords: Copper, Guideline Value, Acute Copper Toxicity, Drinking Water, Humans, Indian Childhood Cirrhosis, Drinking-Water, Dietary Copper, Need, Lead

Sabaté, J., Duk, A. and Lee, C.L. (1999), Publication trends of vegetarian nutrition articles in biomedical literature, 1966–1995. *American Journal of Clinical Nutrition*, **70** (3), 601S-607S.

Full Text: [1999\Ame J Cli Nut70, 601S.pdf](1999/Ame%20J%20Cli%20Nut70,%20601S.pdf)

Abstract: We documented publication trends of vegetarian nutrition articles in biomedical literature between 1966 and 1995 using the National Institutes of Health MEDLINE bibliographic database. The publication rate of vegetarian articles increased steadily during the 3 decades, from an average of <10/y in the late 1960s to 76/y in the early 1990s. After adjusting for the total number of articles indexed in MEDLINE annually, we found that publication of vegetarian nutrition articles increased dramatically, by 4-fold, during the 1970s and reached an oscillating plateau during the 1980s. In the early 1990s, the proportion of vegetarian nutrition articles 8 articles per 1000 vegetarian nutrition articles and ≈20 per 100000 articles indexed by MEDLINE. Non-nutrition journals have progressively published a larger share of all vegetarian articles in the biomedical literature during the period studied. The nature and study design of published vegetarian research has changed over the years as well. The proportion of original research and review articles increased whereas case series and letters to the editor decreased. Reports of epidemiologic studies of vegetarians with longitudinal designs have superseded cross-sectional designs in number and proportion. In 40% of all publications, preventive and therapeutic applications of vegetarian diets constituted the major themes of vegetarian articles in the decade of 1986–1995. However, 20 y earlier the main focus was on the nutritional adequacy of vegetarian diets. The progressive change in the themes of vegetarian nutrition publications is interpreted as a shift in the role of vegetarian diets in human nutrition.

Keywords: Adequacy, Biomedical, Database, Design, Human, Journals, Literature, Longitudinal, MEDLINE, National Institutes of Health, Nutrition, Publication, Publications, Research, Review, Role, Study Design, Therapeutic, Trends

Kostoff, R.N. (2001), Energy restriction. *American Journal of Clinical Nutrition*, **74**, 556-557.

Full Text: [2001\Ame J Cli Nut74, 556.pdf](2001/Ame%20J%20Cli%20Nut74,%20556.pdf)

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Full Text: [2003\Ame J Cli Nut77, 1052S.pdf](2003/Ame%20J%20Cli%20Nut77,%201052S.pdf)

Abstract: Background: Dietary advice to lower blood cholesterol may be given by a variety of means. The relative efficacy of the different methods is unknown. Objective: The objective was to assess the effects of dietary advice given by dietitians compared with advice from other health professionals, or self-help resources, in reducing blood cholesterol in adults. Design: We performed a systematic review, identifying potential studies by searching the electronic databases of the Cochrane Library, MEDLINE, EMBASE, CINAHL, Human Nutrition, Science Citation Index, and Social Sciences Citation Index. We also hand-searched relevant conference proceedings, reference lists in trial reports, and review articles. Finally, we contacted experts in the field. The selection criteria included randomized trials of dietary advice given by dietitians compared with advice given by other health professionals or self-help resources. The main outcome was difference in blood cholesterol between the dietitian group compared with other intervention groups. Inclusion decisions and data extraction were duplicated. Results: Eleven studies with 12 comparisons met the inclusion criteria. Four studies compared dietitians with doctors, 7 with self-help resources, and 1 with nurses. Participants receiving advice from dietitians experienced a greater reduction in blood total cholesterol than those receiving advice from doctors (-0.25 mmol/L, 95% CI-0.37, -0.12 mmol/L). There was no statistically significant difference in change in blood cholesterol between dietitians and self-help resources (-0.10 mmol/L, 95% CI -0.22, 0.03 mmol/L). Conclusions: Dietitians appeared to be better than doctors at lowering blood cholesterol in the short to medium term, though the difference was small (about 4%), but there was no evidence that they were better than self-help resources or nurses.

Keywords: Blood, Cholesterol, Criteria, Data, Databases, Dietary Advice, Doctors, Efficacy, Evidence, Experts, Extraction, Field, Health, Health Professionals, Intervention, MEDLINE, Methods, Nurses, Outcome, Potential, Randomized, Reduction, Review, Science Citation Index, Selection Criteria, Small, Systematic Review, Term, Trial

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Full Text: [2008\Ame J Cli Nut88, 133.pdf](2008/Ame%20J%20Cli%20Nut88,%20133.pdf)

Abstract: Background: Little is known about vitamin D status in breast cancer survivors. This issue is important because vitamin D influences pathways related to carcinogenesis. Objective: The objective of this report was to describe and understand vitamin D status in a breast cancer survivor cohort. Design: Data are from the Health, Eating, Activity, and Lifestyle study. With the use of a cross-sectional design, we examined serum concentrations of 25-hydroxyvitamin D [25(OH)D] in 790 breast cancer survivors from western Washington state, New Mexico, and Los Angeles County. Cancer treatment data were obtained from Surveillance, Epidemiology, and End Results registries and medical records. Fasting blood, anthropometry, and lifestyle habits were collected after diagnosis and treatment. We examined distributions of 25(OH)D by race-ethnicity, season, geography, and clinical characteristics. Multivariate regression tested associations between 25(OH)D and stage of disease. Results: Five hundred ninety-seven (75.6%) of the women had low serum 25(OH)D, suggesting vitamin D insufficiency or frank deficiency. The overall mean (±SD) was 24.8±10.4 ng/mL, but it was lower for African Americans (18.1±8.7 ng/mL) and Hispanics (22.1±9.2 ng/mL). Women with localized (n = 424) or regional (n = 182) breast cancer had lower serum 25(OH)D than did women with in situ disease (n = 184) (P = 0.05 and P = 0.03, respectively). Multivariate regression models controlled for age, body mass index (in kg/m(2)), race-ethnicity, geography, season, physical activity, diet, and cancer treatments showed that stage of disease independently predicted serum 25(OH)D (P = 0.02). Conclusions: In these breast cancer survivors, the prevalence of vitamin D insufficiency was high. Clinicians might consider monitoring vitamin D status in breast cancer patients, together with appropriate treatments, if necessary.

Keywords: 1-Alpha,25-Dihydroxyvitamin D-3, 25-Hydroxyvitamin-D, Anthropometry, Breast Cancer, Cancer, D Analogs, Diet, Dietary-Intake, Lung-Cancer, Prevention, Prostate-Cancer, Receptor, Risk, Serum Concentrations, Stage, Treatment

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Full Text: [2008\Ame J Cli Nut88, 1167.pdf](2008/Ame%20J%20Cli%20Nut88,%201167.pdf)

Abstract: Background: Several clinical trials have investigated the impact of glucomannan on plasma lipids, body weight, fasting blood glucose ( FBG), and blood pressure ( BP), but have yielded conflicting results and had only modest sample sizes. Objective: The objective was to perform a meta-analysis of randomized controlled trials of glucomannan to better characterize its impact on plasma lipids, FBG, body weight, and BP. Design: A systematic literature search of MEDLINE, EMBASE, CINAHL, Web of Science, the Cochrane Library, and the Natural Medicines Comprehensive Database was conducted from the earliest possible date through November 2007. A random-effects model was used to calculate the weighted mean difference( WMD) and 95% CIs as the difference between the mean for the glucomannan and control groups. Standard methods for assessing statistical heterogeneity and publication bias were used. Results: Fourteen studies ( n = 531) met the inclusion criteria. The use of glucomannan significantly lowered total cholesterol [weighted mean difference (WMD): -19.28 mg/dL; 95% CI: -24.30, -14.26], LDL cholesterol (WMD: -15.99 mg/ dL; 95% CI: -21.31, -10.67), triglycerides(WMD: -11.08 mg/ dL; 95% CI: -22.07, -0.09), body weight (WMD: -0.79 kg; 95% CI: -1.53, -0.05), and FBG (WMD: -7.44 mg/dL; 95% CI: -14.16, -0.72). The use of glucomannan did not appear to significantly alter any other study endpoints. Pediatric patients, patients receiving dietary modification, and patients with impaired glucose metabolism did not benefit from glucomannan to the same degree. Conclusions: Glucomannan appears to beneficially affect total cholesterol, LDL cholesterol, triglycerides, body weight, and FBG, but not HDL cholesterol or BP.

Keywords: Bias, Blood, Blood Pressure, Body Weight, Clinical Trials, Clinical-Trials, Cochrane, Control, Control Groups, Density-Lipoprotein Cholesterol, Diet, Embase, Endpoints, Fasting, Fiber, HDL, Hypercholesterolemia, Impact, LDL, Lipid, Lipids, Literature, Medline, Men, Meta-Analysis, Model, Modification, Plasma, Pressure, Publication, Publication Bias, Randomized Controlled Trials, Review, Science, Statistical, Systematic, Systematic Review, Total Cholesterol, Web of Science

? Dangour, A.D., Dodhia, S.K., Hayter, A., Allen, E., Lock, K. and Uauy, R. (2009), Nutritional quality of organic foods: A systematic review. *American Journal of Clinical Nutrition*, **90** (3), 680-685.

Full Text: [2009\Ame J Cli Nut90, 680.pdf](2009/Ame%20J%20Cli%20Nut90,%20680.pdf)

Abstract: Background: Despite growing consumer demand for organically produced foods, information based on a systematic review of their nutritional quality is lacking. Objective: We sought to quantitatively assess the differences in reported nutrient content between organically and conventionally produced foodstuffs. Design: We systematically searched PubMed, Web of Science, and CAB Abstracts for a period of 50 y from 1 January 1958 to 29 February 2008, contacted subject experts, and hand-searched bibliographies. We included peer-reviewed articles with English abstracts in the analysis if they reported nutrient content comparisons between organic and conventional foodstuffs. Two reviewers extracted study characteristics, quality, and data. The analyses were restricted to the most commonly reported nutrients. Results: From a total of 52,471 articles, we identified 162 studies (137 crops and 25 livestock products); 55 were of satisfactory quality. In an analysis that included only satisfactory-quality studies, conventionally produced crops had a significantly higher content of nitrogen, and organically produced crops had a significantly higher content of phosphorus and higher titratable acidity. No evidence of a difference was detected for the remaining 8 of 11 crop nutrient categories analyzed. Analysis of the more limited database on livestock products found no evidence of a difference in nutrient content between organically and conventionally produced livestock products. Conclusions: On the basis of a systematic review of studies of satisfactory quality, there is no evidence of a difference in nutrient quality between organically and conventionally produced foodstuffs. The small differences in nutrient content detected are biologically plausible and mostly relate to differences in production methods. Am J Clin Nutr 2009;90:680-5.

? Dangour, A.D., Lock, K., Hayter, A., Aikenhead, A., Allen, E. and Uauy, R. (2010), Nutrition-related health effects of organic foods: A systematic review. *American Journal of Clinical Nutrition*, **92** (1), 203-210.

Full Text: [2010\Ame J Cli Nut92, 203.pdf](2010/Ame%20J%20Cli%20Nut92,%20203.pdf)

Abstract: Background: There is uncertainty over the nutrition-related benefits to health of consuming organic foods. Objective: We sought to assess the strength of evidence that nutrition-related health benefits could be attributed to the consumption of foods produced under organic farming methods. Design: We systematically searched PubMed, ISI Web of Science, CAB Abstracts, and Embase between 1 January 1958 and 15 September 2008 (and updated until 10 March 2010); contacted subject experts; and hand-searched bibliographies. We included peer-reviewed articles with English abstracts if they reported a comparison of health outcomes that resulted from consumption of or exposure to organic compared with conventionally produced foodstuffs. Results: From a total of 98,727 articles, we identified 12 relevant studies. A variety of different study designs were used; there were 8 reports (67%) of human studies, including 6 clinical trials, 1 cohort study, and 1 cross-sectional study, and 4 reports (33%) of studies in animals or human cell lines or serum. The results of the largest study suggested an association of reported consumption of strictly organic dairy products with a reduced risk of eczema in infants, but the majority of the remaining studies showed no evidence of differences in nutrition-related health outcomes that result from exposure to organic or conventionally produced foodstuffs. Given the paucity of available data, the heterogeneity of study designs used, exposures tested, and health outcomes investigated, no quantitative meta-analysis was justified. Conclusion: From a systematic review of the currently available published literature, evidence is lacking for nutrition-related health effects that result from the consumption of organically produced foodstuffs. Am J Clin Nutr 2010;92:203-10.

Keywords: Antioxidant, Capacity, Clinical Trials, Cohort Study, Consequences, Consumer, Consumption, Density-Lipoprotein Oxidation, Eczema, Guidelines, Health Benefits, Health Outcomes, Human, Humans, Infants, ISI, Literature, Meta-Analysis, Netherlands, Outcomes, Polyunsaturated Fatty-Acids, Pubmed, Quantitative, Review, Risk, Science, Systematic, Systematic Review, Web of Science

? Zittermann, A., Iodice, S., Pilz, S., Grant, W.B., Bagnardi, V. and Gandini, S. (2012), Vitamin D deficiency and mortality risk in the general population: A meta-analysis of prospective cohort studies. *American Journal of Clinical Nutrition*, **95** (1), 91-100.

Full Text: [2012\Ame J Cli Nut95, 91.pdf](2012/Ame%20J%20Cli%20Nut95,%2091.pdf)

Abstract: Background: Low vitamin D status may increase mortality risk. Objective: We used nonparametric (“highest compared with lowest” categories) and parametric (>2 categories) statistical models to evaluate associations of 25-hydroxyvitamin D [25(OH)D] serum concentrations and mortality in observational studies among general populations. Design: We searched PubMed, EMBASE, Web of Science, and reference lists for relevant articles. We included studies that contained data on relative risks (RRs) for mortality for different 25(OH)D concentrations, which included a corresponding measure of uncertainty, and this yielded 14 prospective cohort studies that involved 5562 deaths out of 62,548 individuals. We applied log-transformed RRs and CIs, adjusted for the maximal number of confounding variables. In the parametric model, which is based on 11 studies and 59,231 individuals, we used the lowest quantile as the reference category. Results: For “highest compared with lowest” categories of 25(OH)D, the estimated summary RR of mortality was 0.71 (95% CI: 0.50, 0.91). In the parametric model, the estimated summary RRs (95% CI) of mortality were 0.86 (0.82, 0.91), 0.77 (0.70, 0.84), and 0.69 (0.60, 0.78) for individuals with an increase of 12.5, 25, and 50 nmol 25(OH)D serum values/L, respectively, from a median reference category of similar to 27.5 nmol/L. There was, however, no significant decrease in mortality when an increase of similar to 87.5 nmol/L above the reference category occurred. Conclusion: Data suggest a nonlinear decrease in mortality risk as circulating 25(OH) D increases, with optimal concentrations similar to 75-87.5 nmol/L. Am J Clin Nutr 2012;95:91-100.

Keywords: All-Cause Mortality, Cancer-Risk, Cardiovascular-Disease Mortality, Cohort Studies, Confounding, D Supplementation, D-Receptor, Dose-Response Data, Embase, Meta Analysis, Meta-Analysis, Meta-Regression, Model, Mortality, Nonlinear, Nonparametric, Observational, Observational Studies, Older Men, Pubmed, Randomized-Controlled-Trials, Risk, Science, Serum 25-Hydroxyvitamin D, Statistical, Vitamin D, Web of Science

# Title: American Journal of Clinical Oncology-Cancer Clinical Trials

Full Journal Title: American Journal of Clinical Oncology-Cancer Clinical Trials

ISO Abbreviated Title: Am. J. Clin. Oncol.-Cancer Clin. Trials

JCR Abbreviated Title: Am J Clin Oncol-Canc

ISSN: 0277-3732

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Lippincott Williams & Wilkins

Publisher Address: 530 Walnut St, Philadelphia, PA 19106-3621

Subject Categories:

Oncology: Impact Factor 1.136, 90/114 (2002)

? Cody, R., Stewart, D., Deforni, M., Moore, M., Dallaire, B., Azarnia, N. and Gyves, J. (1993), Multicenter phase-II study of brequinar sodium in patients with advanced breast-cancer. *American Journal of Clinical Oncology-Cancer Clinical Trials*, **16** (6), 526-528.

Abstract: In this study, 34 patients with advanced breast cancer were treated with brequinar sodium: 75% of the patients were postmenopausal, and 94% had received chemotherapy previously; 50% had previously received an anthracycline-containing regimen. Brequinar was administered intravenously at a median weekly dose of 1, 200 mg/m2. The toxicity was moderate, with 17 patients (50%) experiencing grade 3 or 4 toxicity. There were 33 patients evaluable for response: 4 patients (12%; 95% confidence interval, 3.4-28.2%) achieved partial responses, 10 patients (30%) were stable, and 19 patients (58%) had progressive disease. We conclude that. at this dose and schedule, brequinar has only modest activity in patients with advanced breast cancer.

Keywords: NSC 368390, DUP 785, NSC-368390, Tumors, Trial, Acid, Salt, Breast Cancer, Brequinar Sodium, Phase-II

# Title: American Journal of Clinical Pathology

Full Journal Title: [American Journal of Clinical Pathology](http://ajcp.metapress.com/(0mneta45oj0i5mfn01a4mnfd)/app/home/journal.asp?referrer=parent&backto=linkingpublicationresults,1:300401,1)

ISO Abbreviated Title: Am. J. Clin. Pathol.

JCR Abbreviated Title: Am J Clin Pathol

ISSN: 0002-9173

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Soc Clin Pathologists

Publisher Address: 2100 W Harrison St, Chicago, IL 60612

Subject Categories:

Pathology: Impact Factor

? Hartmann, W.H. (1985), Reference citation accuracy. *American Journal of Clinical Pathology*, **82** (4), 513.

? Baron, D.N. (1985), Reference citation accuracy. *American Journal of Clinical Pathology*, **83** (3), 405.

? Honkoop, A.H., Pinedo, H.M., Dejong, J.S., Verheul, H.M.W., Linn, S.C., Hoekman, K., Wagstaff, J. and Vandiest, P.J. (1997), Effects of chemotherapy on pathological and biologic characteristics of locally advanced breast-cancer. *American Journal of Clinical Pathology*, **107** (2), 211-218.

Abstract: In 42 patients with locally advanced breast cancer treated with neoadjuvant chemotherapy followed by surgery and radiation therapy, the effects of chemotherapy on tumor architecture, morphemetric nuclear and nucleolar characteristics, DNA ploidy, proliferation index measured by mitotic activity index, expression of differentiation antigens, and microvessel density were studied. Pretreatment biopsy specimens were available to compare with mastectomy specimens for 24 patients, and subclavicular biopsy specimens taken before chemotherapy were available for 9 patients. In the remaining patients, fine-needle aspiration was performed before chemotherapy, and morphologic and biologic features of the tumors could be studied only after chemotherapy. In 23 patients, only microscopic tumor or no tumor was left after chemotherapy, and in these patients we observed a characteristic pattern of relatively cellular fibrous tissue with lymphocytic infiltrate, iron-loaded macrophages, and, when present, scattered foci of tumor cells in between. We found a reduction in mitotic activity index and in global microvessel density over all the tumors as a group. There was, however, no consistent pattern of changes in nuclear and nucleolar morphometric characteristics, DNA ploidy, and expression of differentiation antigens, and no pathologic or biologic features were predictive for response to chemotherapy.

Keywords: Breast Cancer, Locally Advanced, Neoadjuvant Chemotherapy, Tumor Biology, Tumor Morphology, Independent Prognostic Indicator, Colony-Stimulating Factor, Tumor Angiogenesis, Estrogen-Receptor, Endothelial-Cell, Carcinoma, Proliferation, Expression, Survival, Tissue

# Title: American Journal of Community Psychology

Full Journal Title: [American Journal of Community Psychology](http://www.springerlink.com/content/104830/?p=a7fcdd329d2b426488db315f043717f6&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0091-0562 (Print) 1573-2770 (Online)

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Angelique, H.L. and Culley, M.R. (2000), Searching for feminism: An analysis of community psychology literature relevant to women’s concerns. *American Journal of Community Psychology*, **28** (6), 793-813.

Full Text: [2000\Ame J Com Psy28, 793.pdf](2000/Ame%20J%20Com%20Psy28,%20793.pdf)

Abstract: Articles published in both the American Journal of Community Psychology and Journal of Community Psychology, from their inception in 1973 through 1997, were content analyzed for women relevance, diversity, feminism, and historical change. Overall, 9.8% of the articles reviewed (N = 2,178) were considered women relevant, 4% recognized diversity among women, and 3% were considered feminist. There was an average yearly increase in women-relevant and feminist articles from 7.3 pre-1990 to 11.2 post-1990, and 1.6 pre-1990 to 4.6 post-1990, respectively. Overall, mental health and motherhood were the most addressed content areas. Among feminist articles, gender roles and violence against women were most salient. Race and SES were the most noted issues of diversity in both women-relevant and feminist articles. While an increase in feminist publications by both journals is promising, stereotypes of women and other oppressed groups continue to be perpetuated.

Keywords: Analysis, Community, Diversity, Gender, Health, Historical Change, Journals, Literature, Mental Health, N, Psychology, Publications, Relevance, SE, SES, Violence, Violence Against Women, Women

# Title: American Journal of Diseases of Children

Full Journal Title: American Journal of Diseases of Children

ISO Abbreviated Title:

JCR Abbreviated Title: Am J Dis Child

ISSN: 0002-922X

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Amer Medical Assoc, Chicago

Publisher Address:

Subject Categories:

: Impact Factor

? Kaufman, D.B., Dinicola, W. and Mcintosh, R. (1970), Acute potassium dichromate poisoning - treated by peritoneal dialysis. *American Journal of Diseases of Children*, **119** (4), 374-379.

Partridge, J.C., Payne, M.L., Leisgang, J.J., Randolph, J.F. and Rubinstein, J.H. (1981), Water intoxication secondary to feeding mismanagement: A preventable form of familial seizure disorder in infants. *American Journal of Diseases of Children*, **135** (1), 38-41.

Finberg, L. (1986), Too little water has become too much: The changing epidemiology of water-balance and convulsions in infant diarrhea. *American Journal of Diseases of Children*, **140** (6), 524.

Margolis, L.H., Wagenaar, A.C. and Liu, W. (1988), The effects of a mandatory child restraint law on injuries requiring hospitalization. *American Journal of Diseases of Children*, **142** (10), 1099-1103.

Schaeffer, A.V. and Ditchek, S. (1991), Current social practices leading to water-intoxication in infants. *American Journal of Diseases of Children*, **145** (1), 27-28.

Finberg, L. (1991), Water-intoxication: A prevalent problem in the inner-city. *American Journal of Diseases of Children*, **145** (9), 981-982.

Keating, J.P., Schears, G.J. and Dodge, P.R. (1991), Oral water-intoxication in infants: An American epidemic. *American Journal of Diseases of Children*, **145** (9), 985-990.

Abstract: Between 1975 and 1990, a total of 34 patients with water intoxication were treated at St Louis (Mo) Children’s Hospital, 24 of these in the last 3 years, indicating a marked increase in incidence of this previously rare condition. Thirty-one were infants living in poverty who ingested excessive amounts of water offered at home by their caretakers. Exhaustion of the supply of infant formula was the most common reason given for this substitution. Infants were treated by a single infusion of hypertonic saline or a slow infusion of isotonic saline. Central pontine myelinolysis was not observed as a complication of hypertonic saline therapy. Modification of the Special Supplemental Food Program for Women, Infants, and Children to provide sufficient formula for the growing infant and better education of mothers as to the hazards of excessive water ingestion might reduce the incidence of this preventable and life-threatening condition.

Keywords: Hyponatremia, Convulsions, Seizures, Child

Furth, S. and Oski, F.A. (1993), Hyponatremia and water intoxication. *American Journal of Diseases of Children*, **147** (9), 932-933.

Keywords: Infants

# Title: American Journal of Economics and Sociology

Full Journal Title: American Journal of Economics and Sociology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lee, F.S., Grijalva, T.C. and Nowell, C. (2010), Ranking economics departments in a contested discipline: A bibliometric approach to quality equality between theoretically distinct subdisciplines. *American Journal of Economics and Sociology*, **69** (5), 1345-1375.

Full Text: [2010\Ame J Eco Soc69, 1345.pdf](2010/Ame%20J%20Eco%20Soc69,%201345.pdf)

Abstract: P>Quality ranking of economic journals and departments is a widespread practice in the United States. The methods used are peer review and bibliometric measures. In a divided discipline such as economics scientific knowledge is contested. So knowing which journals and departments are the best in terms of research is somewhat muddied. If the methods used to measure the production of quality scientific knowledge are tilted towards one of the contested approaches, the resulting quality rankings of journals and departments are tilted as well. So if the objective is the open-minded pursuit of the production of scientific knowledge, then it is important to have measures of quality that treat the different contested approaches equally. Our article explores this issue by examining the impact that a quality-equality bibliometric measure can have on the quality rankings of doctoral economic programs in the United States.

Keywords: Bibliometric, Core, Expertise, Impact, Journals, Peer-Review, Production, Quality, Ranking, Research, US

? Lee, F.S., Cronin, B.C., McConnell, S. and Dean, E. (2010), Research quality rankings of heterodox economic journals in a contested discipline. *American Journal of Economics and Sociology*, **69** (5), 1409-1452.

Full Text: [2010\Ame J Eco Soc69, 1409.pdf](2010/Ame%20J%20Eco%20Soc69,%201409.pdf)

Abstract: P>This article argues that the discipline of economics consists of two subdisciplines: heterodox and mainstream economics. Being distinct bodies of knowledge, it is possible that the processes of building scientific knowledge are different enough so to generate distinctly different referencing and citation practices. Therefore, a specific impact contribution score is necessary for ranking heterodox journals in terms of their contribution to building heterodox economics. If properly developed such a metric could also be used to produce a single overall quality-equality ranking of mainstream and heterodox journals. Utilizing citation data and peer evaluations of 62 heterodox economics journals, a research quality measure is developed and then used to rank the journals. The measure is then used in conjunction with the SSCI five-year impact factor to produce a comparative research quality-equality rankings of the 62 heterodox and the 192 mainstream journals in the SSCI.

Keywords: Bibliometrics, Citation, Communication, Contribution, Econometrics, Impact Factor, Impact Factors, Journals, Quality, Rankings, Referencing, Research

# Title: American Journal of Emergency Medicine

Full Journal Title: [American Journal of Emergency Medicine](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6685&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=7563655ba58342160504797825b5593b)

ISO Abbreviated Title: Am. J. Emerg. Med.

JCR Abbreviated Title: Am J Emerg Med

ISSN: 0735-6757

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: W B Saunders Co

Publisher Address: Independence Square West Curtis Center, Ste 300, Philadelphia, PA 19106-3399

Subject Categories:

Emergency Medicine: Impact Factor 1.054, / (2000); Impact Factor 1.208, 4/12 (2002)

Gold, I. and Koenigsberg, M. (1986), Infantile seizures caused by voluntary water-intoxication. *American Journal of Emergency Medicine*, **4** (1), 21-23.

Full Text: [A\Ame J Eme Med4, 21.pdf](A/Ame%20J%20Eme%20Med4,%2021.pdf)

Abstract: A case of infantile seizures of unusual etiology and presentation is described. Water intoxication with resultant epllepticus was caused by ingestion of nearly 150 ml/kg of fresh water on the day of presentation. It is unclear why the infant voluntarily consumed so much water, but heat illness is the most probable cause.

Powers, R.D. and Calkins, K.K. (1998), Multiple authorship revisited: How much is enough? *American Journal of Emergency Medicine*, **16** (7), 708-709.

Full Text: [1998\Ame J Eme Med16, 708.pdf](1998/Ame%20J%20Eme%20Med16,%20708.pdf)

Keywords: Authorship, Emergency Medicine Literature

? Singer, A.J., Homan, C.S., Brody, M., Thode, H.C. and Hollander, J.E. (1999), Evolution of abstracts presented at the annual scientific meetings of academic emergency medicine. *American Journal of Emergency Medicine*, **17** (6), 540-543.

Full Text: [1999\Ame J Eme Med17, 540.pdf](1999/Ame%20J%20Eme%20Med17,%20540.pdf)

Abstract: There has been a general trend in medicine toward greater sophistication in research design. To assess this trend in emergency medicine, we compared the characteristics of abstracts presented at the 1974, 1983, 1989, and 1997 annual scientific meetings of Academic Emergency Medicine. All 870 abstracts were reviewed by 1 of 3 investigators who determined research design attributes using a standardized classification scheme that has good interrater reliability. Over the last 25 years, the following trends were noted: more surveys (0% v 1% v 3% v 8%, P = .002), more randomized studies (0% v 10% v 12% v 15%, P = .05), and more blinded studies (0% v 7% v 5% v 11%, P = .01). Tests of statistical significance were reported with increasing frequency (8% v 26% v 59% v 69%, P < .001), as were power calculations (0% v 0% v 1% v 3%, P = .02), During the study period, there were also increases in the median number of authors, proportion of foreign lead authors, and the proportion of studies involving human subjects. These results reflect considerable improvement in the degree of research design sophistication reported in selected abstracts of academic emergency medicine over the study period. Further strategies to assure continued enhancement of emergency medicine research should be explored. (C) 1999 by W.B. Saunders Company.

Keywords: Characteristics, Classification, Design, Emergency, Emergency Medicine, General, Human, Improvement, Interrater Reliability, Lead, Medicine, P, Power, Randomized, Reliability, Research, Research Design, Significance, Surveys, Trend, Trends

Weiss, S.J., Ellis, R., Ernst, A.A., Land, R.F. and Garza, A. (2001), A comparison of rural and urban ambulance crashes. *American Journal of Emergency Medicine*, **19** (1), 52-56.

Full Text: [A\Ame J Eme Med19, 52.pdf](A/Ame%20J%20Eme%20Med19,%2052.pdf)

Abstract: Ambulance crashes are a significant safety issue both to the EMTs and to patients transported in the vehicle. Safety issues are dependent on the environment and may be different in rural and urban settings. Ambulance crashes reported to the State EMS bureau during the years of 1993 to 1997 were evaluated. Counties with >250,000 population were considered urban. State population was 2 million urban and 2.8 million rural. Two investigators determined first if the crash was urban or rural. Out come information was extracted on the degree of injury, citations given, and information on the ambulance and other vehicle condition. In addition, independent variables of weekend versus weekday, day versus night, posted speed, weather, road condition (wet versus dry), intersections, and use of seat belts were extracted. Results were compared using a P-tailed Chi-square or Fisher’s exact with significance at P <.05. Relative risks and 95% confidence intervals were calculated for each variable. There were a total of 183 Ambulance crashes, 115 urban (19/million pop/yr), and 68 rural (8/million pop/yr). Significantly lower percentage of injury crashes occurred in the urban setting (OR = 0.49, 95% CI = 0.24 to 0.98) with fewer of these considered “severe” (OR = 0.0, 95% CI = 0.0 to 0.73). Citations were more likely to be issued to the urban ambulance driver (OR = 4.95, 95% CI = 1.09 to 45.70) and the other urban vehicle driver (OR = 3.65, 95% CI = 1.37 to 11.31). However, the urban ambulance was less likely to be damaged (OR = 0.24, 95% CI = 0.10 to 0.55), disabled (OR = 0.41, 95% CI = 0.20 to 0.84), or towed (OR = 0.40, 95% CI = 0.20 to 0.83). In the urban setting fewer vehicles were traveling in areas with posted speeds >54 mph (OR = 0.24, 95% CI = 0.06 to 0.78) and nonrestrained people were less likely to be injured (OR = 0.28, 95% CI = 0.06 to 1.25). For injured persons there was no difference in independent variables in the urban versus rural settings. Although the rate of ambulance injuries was greater in the urban environment, the severity of the injuries was worse in the rural environments where crashes occurred at higher posted speeds. In the rural setting nonrestrained passengers were more likely to be injured. (Am J Emerg Med 2001;19: 52-56. Copyright a 2001 by W.B. Saunders Company).

Keywords: EMS, Motor Vehicle Crashes, Injury Prevention, Prehospital, Ambulance

? Tsai, Y.L., Lee, C.C., Chen, S.C. and Yen, Z.S. (2006), Top-cited articles in emergency medicine. *American Journal of Emergency Medicine*, **24** (6), 647-654.

Full Text: [2006\Ame J Eme Med24, 647.pdf](2006/Ame%20J%20Eme%20Med24,%20647.pdf)

Abstract: Study Objective: Our purpose was to identify and examine the characteristics of the most frequently cited articles in the field of emergency medicine (EM). Methods: Top-cited EM articles in 9 EM journals were identified by searching the computerized database of the Science Citation Index Expanded and the Web of Science (1972 to present). Median citation numbers, authors’ nationalities, publication year, and fields of study were described and discussed. Mann-Whitney U and Kruskal-Wallis tests were used to compare groups. Results: All top-cited articles were published during 1972 and 2002. We identified 100 top-cited articles published in 6 EM journals, led by Annals of Emergency Medicine (66) and American Journal of Emergency Medicine (22). Toxicology, traumatology, resuscitation medicine, and cardiovascular medicine were the primary focus of study. The median citation number for these top-cited articles was 102 (range, 71-335). Conclusion: Our analysis gives an encyclopedic review of citation frequency of top-cited articles published in EM journals, which may provide information for those who want to find the history, evolution, and areas of high-impact research activities of EM. (c) 2006 Elsevier Inc. All rights reserved.

Keywords: Activities, Articles, Characteristics, Citation, Citation Frequency, Citation-Classics, Database, Elsevier, Evolution, Frequency, Groups, History, Journal Impact Factors, Journals, Median, Medicine, Primary, Publication, Research, Review, Science, Science Citation Index, Web of Science

# Title: American Journal of Enology and Viticulture

Full Journal Title: American Journal of Enology and Viticulture

ISO Abbreviated Title:

JCR Abbreviated Title: Am J Dis Child

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Glanzel, W. and Veugelers, R. (2006), Science for wine: A bibliometric assessment of wine and grape research for wine-producing and consuming countries. *American Journal of Enology and Viticulture*, **57** (1), 23-32.

Abstract: A bibliometric analysis of wine publications and citations by country and over time related a country’s scientific performance in wine research to its position in the global wine market as a producer, a consumer, or both. Results highlight the extent to which scientific positions can help to explain the emergence of some countries as new participants in the wine industry and established countries as old participants defending their positions. We also examined the extent to which the scientific wine community is in itself becoming increasingly more global through international co-publications. Results suggest that geographical trends in the scientific wine community are only partly related to the shifts in globalization patterns in the wine industry.

Keywords: Analysis, Assessment, Bibliometric Analysis, Collaboration, Community, Emergence, Geographical Trends, Global, Impact, Indicators, Multiple Authorship, Performance, Position, Publications, Research, Scientific Co-Authorship, Trends, Wine and Grape Research

# Title: American Journal of Environmental Sciences

Full Journal Title: [American Journal of Environmental Sciences](http://www.doaj.org/doaj?func=openurl&issn=1553345X&genre=journal)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1553345X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mahmoud, A.S., Ghaly, A.E. and Brooks, M.S. (2007), Removal of dye from textile wastewater using plant oils under different pH and temperature conditions. *American Journal of Environmental Sciences*, **3** (4), 205-218.

Full Text: [2007\Ame J Env Sci3, 205.pdf](2007/Ame%20J%20Env%20Sci3,%20205.pdf)

Abstract: The effectiveness of five plant oils (cottonseed, olive, canola sunflower and used cookingoil) for the removal of dye from textile wastewater was evaluated. The study revealed that the dyeremoval efficiency increased as the temperature was increased. Under low pH, both the oil and dyesplit into two components each. Neither one of the oil components joined with either one of the dyecomponents. However, the observed reduction in the absorbance under acidic conditions can beattributed to the dye components losing some of their original color or producing different colors thatwere not effectively measured at 475 nm. When the dye solution was shaken with the oil underalkaline conditions, it formed a colloidal solution containing the oil plus the dye, resulting in asignificant dye removal from solution. The results also showed that the optimum conditions for the dyeremoval for various oils were at a pH of 13 and a temperature of 55 °C, except for canola oil thatproduced the highest dye removal efficiency at pH of 7. The used cooking oil achieved the highest dyeremoval efficiency (95.45%) followed by olive oil (87.00%). The other oils (cottonseed, canola andsunflower achieved dye removal efficiencies below 58% and are, therefore, not recommended for dyeremoval.

Keywords: Textile Wastewater, Remazol Brilliant Blue, Reactive Dye, Plant Oils, Used Oil, pH

# Title: American Journal of Epidemiology

Full Journal Title: [American Journal of Epidemiology](http://aje.oupjournals.org/)

ISO Abbreviated Title: Am. J. Epidemiol.

Jcr Abbreviated Title: Am J Epidemiol

ISSN: 0002-9262

Issues/Year: 24

Journal Country/Territory: United States

Language: English

Publisher: Johns Hopkins Univ School Hygiene Pub Health

Publisher Address: 111 Market Place, Ste 840, Baltimore, MD 21202-6709

Subject Categories:

Public, Environmental & Occupational Health: Impact Factor, 3.978, 2/85 (1999); Impact Factor, 3.870, 3/89 (2000)

? Dannenberg, A.L. (1985), Use of epidemiology in medical specialties: An examination by citation analysis. *American Journal of Epidemiology*, **121** (1), 140-151.

Full Text: [1985\Ame J Epi121, 140.pdf](1985/Ame%20J%20Epi121,%20140.pdf)

Abstract: Epidemiologic methods have been applied unevenly among medical specialties.Identifying current uses and areas of potential research helps clarify anddefine the field. Using citation analysis of published data, the patterns of references to and by the American Journal of Epidemiology were examinedfor 1974-1982; 17,574 citations to and 15,872 citations by that Journalwere classified according to the subject category of the referencing orreferenced journal. Internal medicine and public health/epidemiologyjournals accounted for the largest proportion of all citations, followed byjournals of immunology, cancer, microbiology, pediatrics, cardiovascularsystem, virology, tropical medicine, statistics, and obstetrics/gynecology.Few citations to or by the Journal were found in the allergy, anesthesiology, dermatology, geriatrics, hematology, nephrology, orthopedics, otorhinolaryngology, radiology, rheumatology, and urologyjournals. Examination of citations between clinical and epidemiologicliterature suggests that adequate interchange between clinicians andepidemiologists is occurring. Citation analysis results for the AmericanJournal of Epidemiology were significantly correlated (p less than 0.05)with those from a MEDLINE search on epidemiologic methods used in researchin 22 clinical specialties. Despite inherent limitations, citation analysisappears to be a useful tool for examining interactions and trends inepidemiology and for identifying fields which may be ripe for newepidemiologic studies.

? Isacson, P., Bean, J.A., Splinter, R., Olson, D.B. and Kohler, J. (1985), Drinking water and cancer incidence in Iowa. III. Association of cancer with indices of contamination. *American Journal of Epidemiology*, **121** (6), 856-869.

Full Text: [1985\Ame J Epi121, 856.pdf](1985/Ame%20J%20Epi121,%20856.pdf)

Abstract: With data from the Iowa Cancer Registry, age-adjusted sex-specific cancer incidence rates for the years 1969-1981 were determined for towns with a population of 1,000-10,000 and a public water supply from a single stable ground source. These rates were related to levels of volatile organic compounds and metals found in the finished drinking water of these towns in the spring of 1979. Results showed association between 1,2 dichloroethane and cancers of the colon and rectum and between nickel and cancers of the bladder and lung. The effects were most clearly seen in males. These associations were independent of other water quality and treatment variables and were not explained by occupational or other sociodemographic features including smoking. Because of the low levels of the metals and organics, the authors suggest that they are not causal factors, but rather indicators of possible anthropogenic contamination of other types. The data suggest that water quality variables other than chlorination and trihalomethanes deserve further consideration as to their role in the development of human cancer.

? Esrey, S.A. and Habicht, J.P. (1988), Maternal literacy modifies the effect of toilets and piped water on infant survival in Malaysia. *American Journal of Epidemiology*, **127** (5), 1079-1087.

Full Text: [1988\Ame J Epi127, 1079.pdf](1988/Ame%20J%20Epi127,%201079.pdf)

Abstract: The effect of toilets, piped water, and maternal literacy on infant mortality was analyzed using data from the Malaysian Family Life Survey collected in 1976-1977. The effect of toilets and piped water on infant mortality was dependent on whether or not mothers were literate. The impact of having toilets was greater among the illiterate than among the literate, but the impact of piped water was greater among the literate than among the illiterate. The effect on the infant mortality rate for toilets decreased from 130.7±17.2 deaths in the absence of literate mothers to 76.2±25.9 deaths in the presence of literate mothers. The reduction in the mortality rate for maternal literacy dropped from 44.4±14.1 deaths without toilets to-10.1±23.9 deaths with toilets. Reductions in mortality rates for piped water increased from 16.7±12.7 deaths without literate mothers to 36.8±21.0 deaths with literate mothers. Similarly, reductions in the mortality rate for maternal literacy rose from 44.4±14.1 deaths in the absence of piped water to 64.5±19.5 deaths in the presence of piped water. The results from a logistic model provided inferences similar to those from ordinary least squares. The authors infer that literate mothers protect their infants especially in unsanitary environments lacking toilets, and that when piped water is introduced, they use it more effectively to practice better hygiene for their infants.

Lamm, S. and Hall, T. (1991), Arsenic exposure: The cause of lung-cancer in cadmium workers. *American Journal of Epidemiology*, **134** (7), 726.

Full Text: [1991\Ame J Epi134, 726.pdf](1991/Ame%20J%20Epi134,%20726.pdf)

Wright, C.E., el Alamy, M., Du Pont, H.L., Holguin, A.H., His, B.P., Thacker, S.B., Zaki, A.M. and Habib, M. (1991), The role of home environment in infant diarrhea in rural Egypt. *American Journal of Epidemiology*, **134** (8), 887-894.

Full Text: [1991\Ame J Epi134, 887.pdf](1991/Ame%20J%20Epi134,%20887.pdf)

Abstract: In 1982 and 1983, a descriptive environmental survey was conducted in 317 households with newborn infants in rural Bilbeis, Egypt. The incidence of infant diarrhea in these households was ascertained by twice-weekly home visits for a 1-year period (1981-1982). Using univariate and multivariate analyses, the authors identified household factors that were statistically associated with infant diarrhea incidence, including number of children in the house under 4 years of age; number of persons per household; incidence of diarrhea in other family members; having a dirt (vs. concrete) dining room floor; having multiple living areas in the house; having a house or roof in need of repair; using well water rather than tap water for cooking or bathin; the absence of a sewer for waste bathwater; food being left out at room temperature between meals; and having many rodents in the house. Two practices involving interaction with the environment appeared to be protective: butchering of cattle by the family for home consumption, and protection of the infant from flies by a veil during napping. The combined household variables explained 25% of the variance in the total incidence of diarrhea. Categories of variables that accounted for most of the total variance explained by environmental factors are, in decreasing order: house structure (28%); water usage (24%); toilet and bathing area (12%); animal management (11%); food preparation area (10%); hygiene (8%); and wastewater management (6%). This approach may be useful in identifying environmental characteristics whose change would reduce diarrheal illness among infants.

Bates, M.N., Smith, A.H. and Hopenhayn Rich, C. (1992), Arsenic ingestion and internal cancers: A review. *American Journal of Epidemiology*, **135** (5), 462-476.

Full Text: [1992\Ame J Epi135, 462.pdf](1992/Ame%20J%20Epi135,%20462.pdf)

Abstract: Inorganic arsenic is known to cause skin cancer by ingestion and lung cancer by inhalation. However, whether arsenic ingestion causes internal cancers is still a matter of debate. This paper has reviewed the epidemiologic literature that bears on this question. Published studies of populations who have ingested arsenic in medicines, wine substitutes, or water supplies, as well as workers exposed to arsenic by inhalation, were considered in terms of whether the observed associations might be explained by the presence of biases, the consistency of the evidence, and the biologic plausibility of the associations. Many studies were found to be uninformative because of low statistical power or potential biases. The most informative studies, which were from Taiwan and Japan, involved exposure to arsenic in drinking water. These studies strongly suggest that ingested inorganic arsenic does cause cancers of the bladder, kidney, lung, and liver, and possibly other sites. However, confirmatory studies are needed.

? Whittemore, A.S., Harris, R. and Itnyre, J. (1992), Characteristics relating to ovarian cancer risk: Collaborative analysis of 12 US case-control studies. II. Invasive epithelial ovarian cancers in white women. *American Journal of Epidemiology*, **136** (10), 1184-1203.

Full Text: [1992\Ame J Epi136, 1184.pdf](1992/Ame%20J%20Epi136,%201184.pdf)

Abstract: Data collected from 2, 197 white ovarian cancer patients and 8, 893 white controls in 12 US case-control studies conducted in the period 1956-1986 were used to evaluate the relation of invasive epithelial ovarian cancer to reproductive and menstrual characteristics, exogenous estrogen use, and prior pelvic surgeries. Clear trends of decreasing risk were evident with increasing number of pregnancies (regardless of outcome) and increasing duration of breast feeding and oral contraceptive use. Ovarian dysfunction leading to both infertility and malignancy is an unlikely explanation for these trends for several reasons: 1) The trends were evident even among the highly parous; 2) risk among nulliparous women did not vary by marital status or gravidity; and 3) risk among ever-married women showed little relation to length of longest pregnancy attempt or history of clinically diagnosed infertility. Risk was increased among women who had used fertility drugs and among women with long total duration of premenopausal sexual activity without birth control; these associations were particularly strong among the nulligravid. No consistent trends in risk were seen with age at menarche, age at menopause, or duration of estrogen replacement therapy. A history of tubal ligation or of hysterectomy with ovarian conservation was associated with reduced ovarian cancer risk. These observations suggest that pregnancy, breast feeding, and oral contraceptive use induce biological changes that protect against ovarian malignancy, that, at most, a small fraction of the excess ovarian cancer risk among nulliparous women is due to infertility, and that any increased risk associated with infertility may be due to the use of fertility drugs.

Keywords: Estrogens, Fertility Agents, Female, Infertility, Lactation, Pregnancy, European Case-Control, Oral-Contraceptive Use, Reproductive Factors, Pooled Analysis, Gonadotropin Therapy, Birth-Weight, Carcinoma, Hysterectomy, Recall, Woman

Wingren, G., Hatschek, T. and Axelson, O. (1993), Determinants of papillary cancer of the thyroid. *American Journal of Epidemiology*, **138** (7), 482-491.

Full Text: [1993\Ame J Epi138, 482.pdf](1993/Ame%20J%20Epi138,%20482.pdf)

Abstract: Determinants of papillary thyroid cancer were evaluated in a questionnaire-based case-control study from southeastern Sweden. A total of 104 cases, diagnosed from 1977 to, 1987 and 387 randomly selected controls were included in the analyses. Female subjects with papillary cancer reported a work history as dentists/dental assistants, telephone operators, teachers, and day nursery personnel, and an occupational contact with chemicals and video display terminals more often than did controls. The 11 male cases more often reported working as mechanics and metal workers and having occupational contact with solvents. Other factors associated with increased risk for female papillary cancer were having private well water at the birth address; leisure time exposure to combustion smoke; low intake of cruciferous vegetables and seafood; and a family history of goiter, heart disease, biliary disorder, or female genital cancer. Diagnostic radiographic examinations, especially to the head, neck, or upper back/chest area, or repeated dental examinations, were also found to be associated with this form of cancer. With regard to the possible influence from hormonal factors among women less than age 50 years at time of diagnosis, an increased risk was found for a pregnancy soon after puberty. Tendencies toward a decreasing risk with increasing age at first pregnancy as well as an increasing risk with increasing number of pregnancies were found as well. Multiparity seemed to potentiate the effect from prior radiographic examinations.

Van Derslice, J. and Briscoe, J. (1995), Environmental interventions in developing countries: Interactions and their implications. *American Journal of Epidemiology*, **141** (2), 135-144.

Full Text: [1995\Ame J Epi141, 135.pdf](1995/Ame%20J%20Epi141,%20135.pdf)

Abstract: This study assesses the effect of drinking water quality on diarrheal disease in good and poor sanitary conditions using a random sample of 2, 355 Filipino infants over the first year of life. The study provides powerful confirmation of the importance of environmental factors on diarrhea: The effects of water quality, household sanitation, and community sanitation are strong, consistent, and statistically significant. The positive impact of improved water quality is greatest for families living under good sanitary conditions, with the effect statistically significant when sanitation is measured at the community level but not significant when sanitation is measured at the household level. Improving drinking water quality would have no effect in neighborhoods with very poor environmental sanitation; however, in areas with better community sanitation, reducing the concentration of fecal coliforms by two orders of magnitude would lead to a 40 percent reduction in diarrhea. Providing private excreta disposal would be expected to reduce diarrhea by 42 percent, while eliminating excreta around the house would lead to a 30 percent reduction in diarrhea. The findings suggest that improvements in both water supply and sanitation are necessary if infant health in developing countries is to be improved. They also imply that it is not epidemiologic but behavioral, institutional, and economic factors that should correctly determine the priority of interventions.

Bates, M.N., Smith, A.H. and Cantor, K.P. (1995), Case-control study of bladder cancer and arsenic in drinking water. *American Journal of Epidemiology*, **141** (6), 523-530.

Full Text: [1995\Ame J Epi141, 523.pdf](1995/Ame%20J%20Epi141,%20523.pdf)

Abstract: Mortality from several cancers, including bladder cancer, is elevated in a Taiwanese population exposed to high levels of arsenic in drinking water. Data from the Utah respondents to the National Bladder Cancer Study conducted in 1978 were used to evaluate these associations in a US population exposed to measurable, but much lower, levels of drinking water arsenic. Two indices of cumulative arsenic exposure were used, one representing total cumulative exposure (index 1) and the other, intake concentration (index 2). Overall, there was no association of bladder cancer with either measure; however, among smokers, but not among nonsmokers, positive trends in risk were found for exposures estimated for decade-long time periods, especially in the 30-to 39-year period prior to diagnosis. Exposures were in the range 0.5-160 micrograms/liter (mean, 5.0 micrograms/liter). The data raise the possibility that smoking potentiates the effect of arsenic on risk of bladder cancer. However, the risk estimates obtained are much higher than predicted on the basis of the results of the Taiwanese studies, raising concerns about bias or the role of chance. Confirmatory studies are needed.

Aronson, K.J., Siemiatycki, J., Dewar, R. and Gérin, M. (1996), Occupational risk factors for prostate cancer: Results from a case-control study in Montréal, Québec, Canada. *American Journal of Epidemiology*, **143** (4), 363-373.

Full Text: [1996\Ame J Epi143, 363.pdf](1996/Ame%20J%20Epi143,%20363.pdf)

Abstract: A population-based case-control study of cancer and occupation was carried out in Montréal, L., Canada. Between 1979 and 1986, 449 pathologically confirmed cases of prostate cancer were interviewed, as well as 1, 550 cancer controls and 533 population controls. Job histories were evaluated by a team of chemist/hygienists using a checklist of 294 workplace chemicals. After preliminary evaluation, 17 occupations, 11 industries, and 27 substances were selected for multivariate logistic regression analyses to estimate the odds ratio between each occupational circumstance and prostate cancer with control for potential confounders. There was moderate support for risk due to the following occupations: electrical power workers, water transport workers, aircraft fabricators, metal product fabricators, structural metal erectors, and railway transport workers. The following substances exhibited moderately strong associations: metallic dust, liquid fuel combustion products, lubricating oils and greases, and polyaromatic hydrocarbons from coal. While the population attributable risk, estimated at between 12% and 21% for these occupational exposures, may be an overestimate due to our method of analysis, even if the true attributable fraction were in the range of 5-10%, this represents an important public health issue.

Rubenowitz, E., Axelsson, G. and Rylander, R. (1996), Magnesium in drinking water and death from acute myocardial infarction. *American Journal of Epidemiology*, **143** (5), 456-462.

Full Text: [1996\Ame J Epi143, 456.pdf](1996/Ame%20J%20Epi143,%20456.pdf)

Abstract: The relation between death from acute myocardial infarction and the level of magnesium in drinking water was examined using mortality registers and a case-control design. The study area comprised 17 municipalities in the southern part of Sweden that have different magnesium levels in the drinking water. Cases were men in the area who had died of acute myocardial infarction between ages 50 and 69 years during the period 1982-1989 (n = 854). The controls were men of the same age in the same area who had died from cancer during the same time period (n = 989). In both groups, only men who consumed water supplied from municipal waterworks were included in the study. The subjects were divided into quartiles according to the drinking water levels of magnesium and calcium and the quotient between magnesium and calcium. The odds ratios for death from acute myocardial infarction in the groups were inversely related to the amount of magnesium in drinking water. For the group with the highest levels of magnesium in drinking water, the odds ratio adjusted for age and calcium level was 0.65 (95 percent confidence interval 0.50-0.84). There was no such relation for calcium. For the magnesium/calcium quotient, the odds ratio was lower only for the group with the highest quotient, These data suggest that magnesium in drinking water is an important protective factor for death from acute myocardial infarction among males.

Keywords: Calcium, Coronary Disease, Drinking Water, Magnesium, Myocardial Infarction, Ischemic-Heart-Disease, Sudden-Death, Cardiovascular Mortality, Muscle Magnesium, Cardiac-Arrhythmias, Deficiency, Hardness, Calcium, Quality

Goodman, K.J., Correa, P., Tenganá Aux, H.J., Ramírez, H., DeLany, J.P., Guerrero Pepinosa, O., López Quiñones, M. and Collazos Parra, T. (1996), Helicobacter pylori infection in the Colombian Andes: A population-based study of transmission pathways. *American Journal of Epidemiology*, **144** (3), 290-299.

Full Text: [1996\Ame J Epi144, 290.pdf](1996/Ame%20J%20Epi144,%20290.pdf)

Abstract: In, (1992), the authors studied Helicobacter pylori infection and exposures relevant to person-to-person, waterborne, foodborne, and zoonotic transmission in a census sample of 684 2-9-year-old children in Aldana, Nariño, a rural community in the Colombian Andes. H. pylori prevalence, as determined by the 13C-urea breath test, was 69%, and prevalence increased from 53% in 2 year-olds to 87% in 9 year-olds. Beginning at 3 years of age, a higher percentage of males compared with females were infected. Odds ratios were estimated by multivariate logistic regression to control for mutual confounding by transmission-pathway proxy variables and socioeconomic indicators. Among transmission-pathway proxies, the strongest predictor of H. pylori status was the number of persons who lived in the home, with the number of children apparently being of greater importance than the number of adults. Swimming in rivers, streams, or pools increased the odds of infection, as did using streams as a drinking water source. Children who frequently consumed raw vegetables were more likely to have the infection, and children who had contact with sheep also had increased prevalence odds. Because the results did not implicate a single mode of transmission, the possibility of multiple pathways is indicated.

? Goodman, M.T., Wilkens, L.R., Hankin, J.H., Lyu, L.C., Wu, A.H. and Kolonel, L.N. (1997), Association of soy and fiber consumption with the risk of endometrial cancer. *American Journal of Epidemiology*, **146** (4), 294-306.

Full Text: [1997\Ame J Epi146, 294.pdf](1997/Ame%20J%20Epi146,%20294.pdf)

Abstract: The authors conducted a case-control study among the multi-ethnic population of Hawaii to examine the role of dietary soy, fiber, and related foods and nutrients on the risk of endometrial cancer. Endometrial cancer cases (n = 332) diagnosed between 1985 and 1993 were identified from the five main ethnic groups in the state (Japanese, Caucasian, Native Hawaiian, Filipino, and Chinese) through the rapid-reporting system of the Hawaii Tumor Registry. Population controls (n = 511) were selected randomly from lists of female Oahu residents and matched to cases on age (±2.5 years) and ethnicity. All subjects were interviewed using a diet history questionnaire that included over 250 food items. Non-dietary risk factors for endometrial cancer included nulliparity, never using oral contraceptives, fertility drug use, use of unopposed estrogens, a history of diabetes mellitus or hypertension, and a high Quetelet’s index (kg/m2). Energy intake from fat, but not from other sources, was positively associated with the risk of endometrial cancer. The authors also found a positive, monotonic relation of fat intake with the odds ratios for endometrial cancer after adjustment for energy intake. The consumption of fiber, but not starch, was inversely related to risk after adjustment for energy intake and other confounders. Similar inverse gradients in the odds ratios were obtained for crude fiber, non-starch polysaccharide, and dietary fiber. Sources of fiber, including cereal and vegetable and fruit fiber, were associated with a 29-46% reduction in risk for women in the highest quartiles of consumption. Vitamin A and possibly vitamin C, but not vitamin E, were also inversely associated with endometrial cancer, although trends were not strong. High consumption of soy products and other legumes was associated with a decreased risk of endometrial cancer (p for trend = 0.01; odds ratio 0.46, 95% confidence interval 0.26-0.83) for the highest compared with the lowest quartile of soy intake. Similar reductions in risk were found for increased consumption of other sources of phytoestrogens such as whole grains, vegetables, fruits, and seaweeds. Ethnic-specific analyses were generally consistent with these results. The observed dietary associations appeared to be largely independent of other risk factors, although the effects of soy and legumes on risk were limited to women who were never pregnant or who had never used unopposed estrogens. These data suggest that plant-based diets low in calories from fat, high in fiber, and rich in legumes (especially soybeans), whole grain foods, vegetables, and fruits reduce the risk of endometrial cancer. These dietary associations may explain in part the reduced rates of uterine cancer in Asian countries compared with those in the United States.

Keywords: Case-Control Studies, Diet, Dietary Fiber, Energy Metabolism, Fats, Soybeans, Uterine Neoplasms, Total Energy-Intake, Body-Fat Distribution, Diet History Method, Breast-Cancer, Epidemiologic Analyses, Postmenopausal Women, Estrogen-Levels, Chinese-Women, Foods, Reproducibility

Smith, A.H., Goycolea, M., Haque, R. and Biggs, M.L. (1998), Marked increase in bladder and lung cancer mortality in a region of Northern Chile due to arsenic in drinking water. *American Journal of Epidemiology*, **147** (7), 660-669.

Full Text: [1998\Ame J Epi147, 660.pdf](1998/Ame%20J%20Epi147,%20660.pdf)

Abstract: Studies in Taiwan and Argentina suggest that ingestion of inorganic arsenic from drinking water results in increased risks of internal cancers, particularly bladder and lung cancer. The authors investigated cancer mortality in a population of around 400,000 people in a region of Northern Chile (Region II) exposed to high arsenic levels in drinking water in past years. Arsenic concentrations from 1950 to the present were obtained. Population-weighted average arsenic levels reached 570 microg/liter between 1955 to 1969, and decreased to less than 100 microg/liter by 1980. Standardized mortality ratios (SMRs) were calculated for the years 1989 to 1993. Increased mortality was found for bladder, lung, kidney, and skin cancer. Bladder cancer mortality was markedly elevated (men, SMR = 6.0 (95% confidence interval (CI) 4.8-7.4); women, SMR = 8.2 (95% CI 6.3-10.5)) as was lung cancer mortality (men, SMR = 3.8 (95% CI 3.5-4.1); women, SMR = 3.1 (95% CI 2.7-3.7)). Smoking survey data and mortality rates from chronic obstructive pulmonary disease provided evidence that smoking did not contribute to the increased mortality from these cancers. The findings provide additional evidence that ingestion of inorganic arsenic in drinking water is indeed a cause of bladder and lung cancer. It was estimated that arsenic might account for 7% of all deaths among those aged 30 years and over. If so, the impact of arsenic on the population mortality in Region II of Chile is greater than that reported anywhere to date from environmental exposure to a carcinogen in a major population.

Keywords: Arsenic, Bladder Neoplasms, Lung Neoplasms, Mortality, Disease Endemic Area, Artesian Well Water, Malignant Neoplasms, Blackfoot Disease, Internal Cancers, Taiwan, Methylation, Kidney, Liver

? Savitz, D.A. (1999), What can we infer from author order in epidemiology? *American Journal of Epidemiology*, **149** (5), 401-403.

Full Text: [1999\Ame J Epi149, 401.pdf](1999/Ame%20J%20Epi149,%20401.pdf)

Keywords: Author, Author Order, Contributors, Responsibility

Tao, X., Zhu, H. and Matanoski, G.M. (1999), Mutagenic drinking water and risk of male esophageal cancer: A population-based case-control study. *American Journal of Epidemiology*, **150** (5), 443-452.

Full Text: [1999\Ame J Epi150, 443.pdf](1999/Ame%20J%20Epi150,%20443.pdf)

Abstract: Drinking mutagenic downstream water from the Huangpu River was hypothesized to have increased the risk for male esophageal cancer in Shanghai, China. The authors conducted a population-based case-control study of a total of 71 esophageal cancer deaths and 1,122 controls collected during a 5-year follow-up period, 1984-1988, from four male cohorts born before January 1, 1944, living in four communities consuming water with different mutagenicities in the Shanghai area. The controls represented a 1% random sample of the defined living cohorts selected at the end of each of the 5 years of follow-up. Logistic regression showed an odds ratio of 2.77 (95% confidence interval: 1.52, 5.03) for drinking mutagenic downstream water from the river versus drinking nonmutagenic upstream water after controlling for possible confounders including age, disease history (hepatitis, cirrhosis, schistosomiasis, digestive tract ulcer), hazardous occupational history, pesticide exposure, lifestyle factors (cigarette smoking, tea intake, and alcohol intake), dietary habits (intake of pickled vegetables, maize, peanuts, and cured meat), education, poverty, urban environment, and water chlorination.

? Baughman, A.L. (1999), Re: “Invited commentary: What can we infer from author order in epidemiology?”. *American Journal of Epidemiology*, **150** (6), 663.

Full Text: [1999\Ame J Epi150, 663.pdf](1999/Ame%20J%20Epi150,%20663.pdf)

Keywords: Author, Author Order

Hertz-Picciotto, I., Arrighi, H.M. and Hu, S.W. (2000), Does arsenic exposure increase the risk for circulatory disease? *American Journal of Epidemiology*, **151** (2), 174-181.

Full Text: [2000\Ame J Epi151, 174.pdf](2000/Ame%20J%20Epi151,%20174.pdf)

Abstract: Studies of residents in communities with high endemic concentrations of arsenic in drinking water suggest a deleterious effect on the circulatory system; however, studies among workers with high occupational exposures generally have shown either no or weak associations. This discrepancy could be a result of the healthy worker effect, including the healthy hire component and the healthy worker survivor effect (HWSE). Therefore, the authors conducted analyses of arsenic exposure in relation to circulatory disease mortality among 2,802 Tacoma, Washington, smelter workers by using 1) internal comparisons to control for the healthy hire effect and 2) the lagging method, adjustment for employment status, and the G-null test to control for the HWSE. Both lagging and adjustment for work status increased circulatory mortality rate ratios at all exposure levels, as compared with a baseline Poisson model. This excess mortality was limited to cardiovascular disease; no excess was observed for cerebrovascular disease. G-null analyses suggested no adverse effect, but power was very limited for this analysis. Overall, these results may indicate that the HWSE obscures an effect of arsenic on circulatory disease. Since cardiovascular deaths constitute about one-third of total mortality, small rate ratios translate into large numbers of excess deaths and, if causal, could be of wide public health significance. Further studies of arsenic exposure and cardiovascular disease are needed, and those conducted in occupational cohorts must control for the HWSE.

Rondeau, V., Commenges, D., Jacqmin-Gadda, H. and Dartigues, J.F. (2000), Relation between aluminum concentrations in drinking water and Alzheimer’s disease: An 8-year follow-up study. *American Journal of Epidemiology*, **152** (1), 59-66.

Full Text: [2000\Ame J Epi152, 59.pdf](2000/Ame%20J%20Epi152,%2059.pdf)

Abstract: To investigate the effect of aluminum and silica in drinking water on the risk of dementia and Alzheimer’s disease, the authors analyzed data from a large prospective cohort (Paquid), including 3,777 subjects aged 65 years and over living at home in 75 civil parishes in Gironde and Dordogne in southwestern France in 1988-1989. The subjects were followed for up for 8 years with an active search for incident cases of dementia or Alzheimer’s disease. Mean exposure to aluminum and silica in drinking water was estimated in each area. The sample studied included 2,698 nondemented subjects at baseline, for whom components of drinking water and covariates were available, A total of 253 incident cases of dementia (with 17 exposed to high levels of aluminum), including 182 Alzheimer’s disease (with 13 exposed to high aluminum levels), were identified. The relative risk of dementia adjusted for age, gender, educational level, place of residence, and wine consumption was 1, 99 (95 percent CI: 1, 20, 3.28) for subjects exposed to an aluminum concentration greater than 0.1 mg/liter. This result was confirmed for Alzheimer’s disease (adjusted relative risk = 2.14, 95 percent CI: 1.21, 3.80). However, no dose-response relation was found. Inversely, the adjusted relative risk of dementia for subjects exposed to silica (greater than or equal to 11.25 mg/liter) was 0.74 (95 percent CI: 0.58, 0.96). These findings support the hypothesis that a high concentration of aluminum in drinking water may be a risk factor for Alzheimer’s disease.

Keywords: Aluminum, Alzheimer’s Disease, Dementia, Drinking Water, Silica, Mini-Mental-State, Cognitive Impairment, Risk-Factors, Dementia, Encephalopathy, Absorption, Community, Exposure, Silicon

Chiou, H.Y., Chiou, S.T., Hsu, Y.H., Chou, Y.L., Tseng, C.H., Wei, M.L. and Chen, C.J. (2001), Incidence of transitional cell carcinoma and arsenic in drinking water: A follow-up study of 8,102 residents in an arseniasis-endemic area in northeastern Taiwan. *American Journal of Epidemiology*, **153** (5), 411-418.

Full Text: [A\Ame J Epi153, 411.pdf](A/Ame%20J%20Epi153,%20411.pdf)

Abstract: A significant association between ingested arsenic and bladder cancer has been reported in an arseniasis-endemic area in southwestern Taiwan, where many households share only a few wells in their villages. In another arseniasis-endemic area in northeastern Taiwan, each household has its own well for obtaining drinking water. In 1991-1994, the authors examined risk of transitional cell carcinoma (TCC) in relation to ingested arsenic in a cohort of 8,102 residents in northeastern Taiwan. Estimation of each study subject’s individual exposure to inorganic arsenic was based on the arsenic concentration in his or her own well water, which was determined by hydride generation combined with atomic absorption spectrometry Information on duration of consumption of the well water was obtained through standardized questionnaire interviews. The occurrence of urinary tract cancers was ascertained by follow-up interview and by data linkage with community hospital records, the national death certification profile, and the cancer registry profile. Cox proportional hazards regression analysis was used to estimate multivariate-adjusted relative risks and 95% confidence intervals. There was a significantly increased incidence of urinary cancers for the study cohort compared with the general population in Taiwan (standardized incidence ratio = 2.05; 95% confidence interval (CI), 1.22, 3.24). A significant dose-response relation between risk of cancers of the urinary organs. especially TCC, and indices of arsenic exposure was observed after adjustment for age, sex, and cigarette smoking. The multivariate-adjusted relative risks of developing TCC were 1.9, 8.2, and 15.3 for arsenic concentrations of 10.1-50.0, 50.1-100, and >100 µg/liter, respectively, compared with the referent level of less than or equal to 10.0 µg/liter.

Keywords: Carcinoma, Transitional Cell, Drinking, Incidence, Risk Assessment, Urologic Neoplasms, Water Supply, Artesian Well Water, Malignant Neoplasms, Blackfoot Disease, Cancer Mortality, Bladder-Cancer, Respiratory Cancer, Kidney Cancer, Lung, Exposure, Argentina

? Hasbrouck, L.M., Taliano, J.M., Hirshon, J.M. and Dannenberg, A.L. (2001), Trends in communication between epidemiology and clinical medicine, 1983-1999: A citation analysis. *American Journal of Epidemiology*, **153** (11S), 766.

Hasbrouck, L.M., Taliano, J., Hirshon, J.M. and Dannenberg, A.L. (2003), Use of epidemiology in clinical medical publications, 1983-1999: A citation analysis. *American Journal of Epidemiology*, **157** (5), 399-408.

Full Text: [2003\Ame J Epi157, 399.pdf](2003/Ame%20J%20Epi157,%20399.pdf)

Abstract: Epidemiologists respond to the information needs of health professionals. Although medical professionals are routine users of epidemiologic information, use within medical specialties varies remarkably. To explore the variation in use of epidemiologic information across clinical medical specialties, the authors examined the scientific literature by analyzing patterns of citation of specific journal articles to and by the American Journal of Epidemiology (AJE). A total of 178,396 journal citations to and 126,478 citations by AJE were made from 1983 through 1999; citations were classified according to the subject category of the referencing or referenced journal. Clinical medical journals accounted for 50.6% of all citations combined (both referenced to and referenced by AJE); general/internal medicine (17.9%), cancer (10.4%), and cardiovascular (4.9%) journals had the highest number of citations. Few citations to and by AJE were found in publications specializing in dermatology, gastroenterology, orthopedics, allergy, anesthesiology, surgery, rheumatology, and other areas. Trend patterns of citations between clinical and epidemiologic literature indicated that citations to the fields of cardiovascular disease and cancer are increasing, whereas citations regarding pediatrics have remained stable. This analysis suggests an increasing interchange of information between epidemiologists and clinicians specializing in certain fields, uncovering potential research opportunities for epidemiologists.

Keywords: Citation Analysis, Clinical Medicine, English, Epidemiology, Medical, Medical Journals, Public Health, Publishing, Research

? Baumgartner, K.B., Hunt, W.C., Baumgartner, R.N., Crumley, D.D., Gilliland, F.D., McTiernan, A., Bernstein, L. and Ballard-Barbash, R. (2004), Association of body composition and weight history with breast cancer prognostic markers: Divergent pattern for hispanic and non-hispanic white women. *American Journal of Epidemiology*, **160** (11), 1087-1097.

Full Text: [2004\Ame J Epi160, 1087.pdf](2004/Ame%20J%20Epi160,%201087.pdf)

Abstract: Body composition and weight gain are breast cancer risk factors that may influence prognosis. The Health, Eating, Activity, and Lifestyle Study was designed to evaluate the relations of body composition, weight history, hormones, and lifestyle factors to prognosis for women with breast cancer. In the cross-sectional analysis of this cohort study specific to 150 Hispanic and 466 non-Hispanic White women in New Mexico diagnosed between 1996 and 1999, the authors hypothesized that obesity measures are associated with baseline prognostic markers and that these associations are modified by ethnicity. Ethnic-stratified multiple logistic regression analyses showed divergent results for a tumor size of 1.0 cm or more and, to a lesser extent, positive lymph node status. Among Hispanics, the highest quartile for body mass index (29.5 vs. <22.5 kg/m(2): odds ratio (OR) = 0.16, 95% confidence interval (CI): 0.03, 0.84) and for waist circumference (greater than or equal to95.0 vs. <78.5 cm: OR = 0.09, 95% CI: 0.01, 0.78) was significantly associated with a reduced tumor size. In contrast, for overweight and obese non-Hispanic White women, there was an increased association with obesity-related measures, particularly striking for the highest quartile of waist circumference (OR = 2.76, 95% CI: 1.45, 5.26). These findings suggest that Hispanics may have a different breast cancer phenotype than non-Hispanic Whites, which associates differently with body composition and weight history.

Keywords: Anthropometry, Biological Markers, Body Composition, Body Constitution, Breast Cancer, Breast Neoplasms, Cancer, Estrogen-Receptor, Fat Distribution, Hispanic Americans, Mass-Index, Obesity, Postmenopausal Women, Prognosis, Racial, Ethnic Groups, Relative Weight, Sex-Hormones, Survival, United-States, Weight

? Oakes, J.M. (2005), An analysis of *American Journal of Epidemiology* citations with special reference to statistics and social science. *American Journal of Epidemiology*, **161** (5), 494-500.

Full Text: [2005\Ame J Epi161, 494.pdf](2005/Ame%20J%20Epi161,%20494.pdf)

Abstract: In an effort to inform the ongoing discussion about the purpose, purview, theoretical orientation, and viability of epidemiology, this paper considers the contemporary epistemological foundations of the discipline by analyzing article citations. Two principal questions are the following: 1) What research do American Journal of Epidemiology (AJE) authors rely on to support, inform, and frame their investigations? and 2) to what extent do such authors use social scientific and statistical citations? The data used appear to be superior to those used in previous efforts because they contain complete citations for all articles published, along with complete within-article citations, for all AJE articles published from January 1981 to December 2002. The most frequent AJE citations are statistically oriented works. About 9% of citations are to AJE articles, 15% are to a larger set of eight epidemiologic journals, 15% are to a select set of eight medical journals, 3% are to (bio) statistics journals, and just 0.2% are to social science journals. Trend analysis reveals little change during the 22-year study period. The principal implication is that AJE authors are overlooking a vast literature that could inform their understanding of how exposures emerge and are maintained.

Keywords: Analysis, Citations, Data, Epidemiology, Exposures, Investigations, Journal, Journals, Literature, Medical, Medical Journals, Purpose, Research, Science, Science Journals, Social, Statistics, Support, Trend Analysis, Understanding, Viability

? Navas-Acien, A., Sharrett, A.R., Silbergeld, E.K., Schwartz, B.S., Nachman, K.E., Burke, T.A. and Guallar, E. (2005), Arsenic exposure and cardiovascular disease: A systematic review of the epidemiologic evidence. *American Journal of Epidemiology*, **162** (5), 1-13.

Full Text: [2005\Ame J Epi162, 1.pdf](2005/Ame%20J%20Epi162,%201.pdf)

Abstract: Arsenic exposure is a likely cause of blackfoot disease and a potential risk factor for atherosclerosis. The authors performed a systematic review of the epidemiologic evidence on the association between arsenic and cardiovascular outcomes. The search period was January 1966 through April 2005. Thirteen studies conducted in general populations (eight in high-arsenic areas in Taiwan, five in other countries) and 16 studies conducted in occupational populations were identified. Exposure was assessed ecologically in most studies. In Taiwan, relative risks comparing the highest arsenic exposure category with the lowest ranged from 1.59 to 4.90 for coronary disease, from 1.19 to 2.69 for stroke, and from 1.66 to 4.28 for peripheral arterial disease. In other general populations, relative risks ranged from 0.84 to 1.54 for coronary disease, from 0.69 to 1.53 for stroke, and from 0.61 to 1.58 for peripheral arterial disease. In occupational populations, relative risks ranged from 0.40 to 2.14 for coronary disease mortality and from 0.30 to 1.33 for stroke mortality. Methodologic limitations, however, limited interpretation of the moderate-to-strong associations between high arsenic exposure and cardiovascular outcomes in Taiwan. In other populations or in occupational settings, the evidence was inconclusive. Because of the high prevalence of arsenic exposure, carefully performed studies of arsenic and cardiovascular outcomes should be a research priority.

Keywords: Arsenic, Arteriosclerosis, Cardiovascular Diseases, Review

? Morton, L.M., Cahill, J. and Hartge, P. (2006), Reporting participation in epidemiologic studies: A survey of practice. *American Journal of Epidemiology*, **163** (3), 197-203.

Full Text: [2006\Ame J Epi163, 197.pdf](2006/Ame%20J%20Epi163,%20197.pdf)

Abstract: Self-selection bias may threaten the internal validity of epidemiologic studies. Studies with a low level of participation are particularly vulnerable to this bias, and commentators note apparent declines in participation in recent years. The authors therefore conducted a retrospective review to survey the practice of reporting participation in epidemiologic studies, to assess changes in participation over time, and to evaluate the impact of increased biologic specimen collection on participation. The authors abstracted selected study characteristics from 355 peer-reviewed, original, analytic-epidemiology research articles published from January 1 to April 30, 2003, in 10 high-impact general epidemiology, public health, and medical journals. At least some information regarding participation was provided in 59% of cross-sectional studies, 44% of case-control studies, and 32% of cohort studies. Participation appears to have declined during 1970-2003 for all study designs. Participation declined most steeply for controls in population-based, case-control studies (-1.86% per year, 95% confidence interval: -3.03, -0.69), with steeper declines after 1990. Proportionately more studies collected biologic specimens over time, particularly for cohort and case-control study designs (p(trend) = 0.06 and 0.03, respectively), yet participation was reported separately for the biologic specimen study component in only 27% of studies. The authors conclude that epidemiologists need to address declining participation and to report participation consistently, including for biologic specimen collection.

Keywords: Bias, Case-Control, Case-Control Studies, Case-Control Study, Changes, Characteristics, Cohort, Collection, Confidence, Cross-Sectional Studies, Epidemiology, General, Health, Impact, Information, Interval, Journals, Medical, Medical Journals, Participation, Peer-Reviewed, Population-Based, Practice, Public, Public Health, Reporting, Research, Review, Survey, Validity

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Full Text: [2010\Ame J Epi172, 631.pdf](2010/Ame%20J%20Epi172,%20631.pdf)

Abstract: Several studies have recently focused on the association between heme oxygenase-1 (HMOX1) gene promoter polymorphisms and susceptibility to type 2 diabetes mellitus; however, results have been conflicting. This systematic Human Genome Epidemiology review and meta-analysis was undertaken to integrate previous findings and summarize the effect size of the association of HMOX1 gene promoter polymorphisms with susceptibility to type 2 diabetes. The authors retrieved all studies matched to search terms from the PubMed/MEDLINE, EMBASE, and ISI Web of Science databases that had been published through December 31, 2009. The articles were then checked independently by 2 investigators according to the eligibility and exclusion criteria. For all alleles and genotypes, odds ratios were pooled using either fixed-effects or random-effects models. An increased odds ratio for type 2 diabetes was observed in persons with the (GT)(n) L (long) allele as compared with those with the (GT)(n) S (short) allele (odds ratio = 1.12, 95% confidence interval: 1.02, 1.24; P = 0.02). Furthermore, the diabetes odds ratio for persons with the LL genotype, versus those with the SS genotype, was significantly increased (odds ratio = 1.25, 95% confidence interval: 1.04, 1.50; P = 0.02). Persons carrying longer (GT)(n) repeats in the HMOX1 gene promoter may have a higher risk of type 2 diabetes.

Keywords: Apoptosis, Authors, Coronary-Artery Disease, Databases, Diabetes, Diabetes Mellitus, Embase, Epidemiology, Genetics, Genome, Heme Oxygenase-1, Human, ISI, Japanese, Meta-Analysis, Microsatellite Polymorphism, Polymorphism, Polymorphisms, Ratio, Review, Risk, Science, Single Nucleotide, Susceptibility, Systematic, Type 2, Type 2 Diabetes, Type 2 Diabetes Mellitus, Web of Science

? Dufault, B. and Klar, N. (2011), The quality of modern cross-sectional ecologic studies: A bibliometric review. *American Journal of Epidemiology*, **174** (10), 1101-1107.

Full Text: [2011\Ame J Epi174, 1101.pdf](2011/Ame%20J%20Epi174,%201101.pdf)

Abstract: The ecologic study design is routinely used by epidemiologists in spite of its limitations. It is presently unknown how well the challenges of the design are dealt with in epidemiologic research. The purpose of this bibliometric review was to critically evaluate the characteristics, statistical methods, and reporting of results of modern cross-sectional ecologic papers. A search through 6 major epidemiology journals identified all cross-sectional ecologic studies published since January 1, 2000. A total of 125 articles met the inclusion requirements and were assessed via common evaluative criteria. It was found that a considerable number of cross-sectional ecologic studies use unreliable methods or contain statistical oversights; most investigators who adjusted their outcomes for age or sex did so improperly (64%), statistical validity was a potential issue for 20% of regression models, and simple linear regression was the most common analytic approach (31%). Many authors omitted important information when discussing the ecologic nature of their study (31%), the choice of study design (58%), and the susceptibility of their research to the ecological fallacy (49%). These results suggest that there is a need for an international set of guidelines that standardizes reporting on ecologic studies. Additionally, greater attention should be given to the relevant biostatistical literature.

Keywords: Attention, Authors, Bibliometric, Bibliometric Review, Cross-Sectional Studies, Design, Ecological Models, Epidemiologic Methods, Epidemiology, Guidelines, Individuals, Information, Journals, Linear Regression, Literature, Outcomes, Papers, Quality, Regression, Research, Research Design, Review, Sex, Statement, Statistical, Statistical Methods, Susceptibility, Trials, Validity

? Thacker, S.B., Stroup, D.F. and Sencer, D.J. (2011), Epidemic assistance by the centers for disease control and prevention: Role of the epidemic intelligence service, 1946-2005. *American Journal of Epidemiology*, **174**, S4-S15.

Full Text: [2011\Ame J Epi174, S4.pdf](2011/Ame%20J%20Epi174,%20S4.pdf)

Abstract: Since 1946, the Centers for Disease Control and Prevention has responded to urgent requests from US states, federal agencies, and international organizations through epidemic-assistance investigations (Epi-Aids). The authors describe the first 60 years of Epi-Aids, breadth of problems addressed, evolution of methodologies, scope of activities, and impact of investigations on population health. They reviewed Epi-Aid reports and EIS Bulletins, contacted current and former Epidemic Intelligence Service staff, and systematically searched the PubMed and Web of Science databases. They abstracted information on dates, location, staff involved, health problems, methods, and impacts of investigations according to a preplanned protocol. They assessed the methods presented as well as the quality of reports. During 1946-2005, a total of 4,484 investigations of health events were initiated by 2,815 Epidemic Intelligence Service officers. In the early years, the majority were in response to infectious agents, although environmental problems emerged. Investigations in subsequent years focused on occupational conditions, birth defects, reproductive health, tobacco use, cancer, violence, legal debate, and terrorism. These Epi-Aids heralded expansion of the agency's mission and presented new methods in statistics and epidemiology. Recommendations from Epi-Aids led to policy implementation, evaluation, or modification. Epi-Aids provide the Centers for Disease Control and Prevention with the agility to respond rapidly to public health crises.

Keywords: Activities, Authors, Cancer, Centers for Disease Control and Prevention U, Databases, EIS, Environmental, Epidemiology, Evaluation, Evolution, Field Investigations, Impact, Information, Modification, Occupational, Policy, Population Health, Population Surveillance, Preventive Medicine, Protocol, Public Health, Pubmed, Quality, S, Science, Sentinel Surveillance, Statistics, Terrorism, Tobacco, US, Web of Science

# Title: American Journal of Evaluation

Full Journal Title: [American Journal of Evaluation](http://aje.sagepub.com/archive/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Trochim, W.M., Marcus, S.E., Masse, L.C., Moser, R.P. and Weld, P.C. (2008), The evaluation of large research initiatives: A participatory integrative mixed-methods approach. *American Journal of Evaluation*, **29**, 8-28.

Full Text: [2008\Ame J Eva29, 8.pdf](2008/Ame%20J%20Eva29,%208.pdf)

Abstract: Over the past few decades there has been a rise in the number of federally funded large scientific research initiatives, with increased calls to evaluate their processes and outcomes. This article describes efforts to evaluate such initiatives in one agency within the U.S. federal government. The authors introduce the Evaluation of Large Initiatives (ELI) project, a preliminary effort to explore how to accomplish such evaluation. They describe a pilot effort of this project to evaluate the Transdisciplinary Tobacco Use Research Center (TTURC) initiative of the National Cancer Institute. They present a summary of this pilot evaluation including the methods used (concept mapping, logic modeling, a detailed researcher survey, content. analysis and systematic peer-evaluation of progress reports, bibliometric analysis and peer evaluation of publications and citations, and financial expenditures analysis) and a brief overview of results. Finally, they discuss several important lessons and recommendations that emerged from this work.

Keywords: Authors, Bibliometric, Bibliometric Analysis, Bibliometrics, Center Grants, Citation Analysis, Citations, Cocitation Analysis, Concept Mapping, Conceptualization, Evaluating Research, Evaluation, Federal Evaluation, Journals, Logic Models, Publications, Research, Research Impact, Science, Scientific Research, Scientometrics

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Full Text: [2010\Ame J Eva31, 24.pdf](2010/Ame%20J%20Eva31,%2024.pdf)

Abstract: As is the case with other fields, there is motivation for studying the impact that the body of evaluation theory literature has within and outside the field. The authors used journal articles written by theorists included on the evaluation theory tree by Alkin and Christie (2004; Christie & Alkin, 2008) and published in the Web of Science, an online academic database, as a data source to address the questions: “What fields of knowledge do evaluation theorists draw upon in their publications?” and “What fields draw upon the published articles of evaluation theorists in their work?” The bibliometric analysis of 731 journal articles published by evaluation theorists shows that evaluation is an intellectual field that is strongly informed by psychology and education, as well as a range of other subjects. There are some consistencies in the publishing patterns of the theorists across the three branches of the theory tree (methods, use, and valuing), but multidimensional scaling maps show that each branch also exhibits a distinctive character of its own. References to a random sample of 500 articles from a subset of 9 theorists indicate that these theorists were cited not only in the areas that they themselves cite, but also in areas beyond where they routinely publish.

Keywords: Articles, Bibliometric, Bibliometric Analysis, Citation Analysis, Database, Education, Evaluation, Evaluation Theory, Impact, Interdisciplinary, Journal, Knowledge, Literature, Methods, Publishing, Research on Evaluation, Scaling, Science, Theory, Web of Science

? Campbell, D., Picard-Aitken, M., Cote, G., Caruso, J., Valentim, R., Edmonds, S., Williams, G.T., Macaluso, B., Robitaille, J.P., Bastien, N., Laframboise, M.C., Lebeau, L.M., Mirabel, P., Lariviere, V. and Archambault, E. (2010), Bibliometrics as a performance measurement tool for research evaluation: The case of research funded by the National Cancer Institute of Canada. *American Journal of Evaluation*, **31** (1), 66-83.

Full Text: [2010\Ame J Eva31, 66.pdf](2010/Ame%20J%20Eva31,%2066.pdf)

Abstract: As bibliometric indicators are objective, reliable, and cost-effective measures of peer-reviewed research outputs, they are expected to play an increasingly important role in research assessment/management. Recently, a bibliometric approach was developed and integrated within the evaluation framework of research funded by the National Cancer Institute of Canada (NCIC). This approach helped address the following questions that were difficult to answer objectively using alternative methods such as program documentation review and key informant interviews: (a) Has the NCIC peer-review process selected outstanding Canadian scientists in cancer research? (b) Have the NCIC grants contributed to increasing the scientific performance of supported researchers? (c) How do the NCIC-supported researchers compare to their neighbors supported by the U. S. National Cancer Institute? Using the NCIC evaluation as a case study, this article demonstrates the usefulness of bibliometrics to address key evaluation questions and discusses its integration, along complementary indicators (e. g., peer ratings), in a practice-driven research evaluation continuum.

Keywords: Bibliometrics, Citation Analysis, Grant Program, Performance Measurement, Research Evaluation, Citation, Indicators, Journals

# Title: American Journal of Forensic Medicine and Pathology

Full Journal Title: American Journal of Forensic Medicine and Pathology

ISO Abbreviated Title: Am. J. Forensic Med. Pathol.

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ISSN: 0195-7910

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Journal Country/Territory: United States

Language: English

Publisher: Lippincott Williams & Wilkins

Publisher Address: 530 Walnut St, Philadelphia, PA 19106-3621

Subject Categories:

Medicine, Legal Pathology: Impact Factor

? Ozonoff, D. (1982), Medical aspects of the hazardous waste problem. *American Journal of Forensic Medicine and Pathology*, **3** (4), 343-348.

Abstract: Although no one knows exactly how much toxic material continues to be released into our environment, most observers believe the amount is substantial. In the last few years, in the state of Massachusetts alone, 22 communities have had their municipal water supplies seriously compromised by chemical contamination, (1) causing alarm and dismay among water users. Nation-wide, public concern has reached the point that in some opinion polls, hazardous waste ranks second only behind inflation as a cause of serious worry. Despite widespread anxiety, shared by public health officials, few studies have shown conclusive evidence of health consequences from toxic materials in the environment. Even in the case of such gross contamination as in the Love Canal area of Niagara Falls, New York, health effects have been difficult to establish. (2) This is partly due to intrusion of the adversary process in cases where liability is involved; it is also a result, however, of inherent technical problems that plague any determination of health hazard. This paper reviews some of these problems, considers some current risk assessment approaches, and touches on medicolegal and regulatory aspects of the hazardous waste problem.

? Kanchan, T., Menezes, R.G. and Kalthur, S.G. (2010), “Unintentional” self-plagiarism. *American Journal of Forensic Medicine and Pathology*, **31** (4), E10.

Keywords: South-Africa, Transkei Region

# Title: American Journal of Gastroenterology

Full Journal Title: [American Journal of Gastroenterology](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6076&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=a1d285eb7160f060b830b38d751622c4)

ISO Abbreviated Title: Am. J. Gastroenterol.

JCR Abbreviated Title: Am J Gastroenterol

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Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Elsevier Science Inc

Publisher Address: 655 Avenue of the Americas, New York, NY 10010

Subject Categories:

Gastroenterology & Hepatology: Impact Factor 3.549,/(2001)

Marshall, J.K., Cawdron, R., Yamamura, D.L.R., Ganguli, S., Lad, R. and O’Brien, B.J. (2002), Use and misuse of cost-effectiveness terminology in the gastroenterology literature: A systematic review. *The American Journal of Gastroenterology*, **97** (1), 172-179.

Full Text: [2002\Ame J Gas97, 172.pdf](2002/Ame%20J%20Gas97,%20172.pdf)

Abstract: OBJECTIVES: The increased popularity of economic analyses for evaluating medical interventions has given rise to concern about the rigor with which economic constructs and terminology are used. True cost-effectiveness analysis considers both the costs and outcomes of alternative interventions. A systematic review of the gastroenterology literature was undertaken to evaluate how appropriately cost-effectiveness is assessed.

METHODS: A structured MEDLINE search identified all studies published in major gastroenterology journals between 1980 and 1998 that claimed in their abstracts to have assessed the cost-effectiveness of an intervention. Blinded copies of eligible studies were assessed by two independent reviewers who used standard criteria to evaluate the use of economic terminology and key economic constructs. Discrepancies were resolved by consensus. Studies met a “broad criterion” for appropriateness by evaluating both costs and effects and a “strict criterion” by demonstrating dominance of one strategy or considering both incremental costs and incremental effects.

RESULTS: of 110 eligible studies, 77 (70.0%) met the broad criterion and 62 (56.4%) met the strict criterion for appropriateness. This did not seem to vary with either journal impact factor or publication year. Only eight of 18 studies reporting an incremental cost-effectiveness ratio compared its value to an external standard. Few studies explicitly stated their analytic perspective, and a minority of those with time horizons longer than 1 yr had discounted future costs or effects.

CONCLUSIONS: Although most studies seem to use cost-effectiveness terminology well, there remains room to improve the rigor with which economic terminology and constructs are applied.

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Full Text: [2002\Ame J Gas97, 2695.pdf](2002/Ame%20J%20Gas97,%202695.pdf)

Keywords: Diseases, Trends

? Sebastian, S., Johnston, S., Geoghegan, T., Torreggiani, W. and Buckley, M. (2004), Pooled analysis of the efficacy and safety of self-expanding metal stenting in malignant colorectal obstruction. *American Journal of Gastroenterology*, **99** (10), 2051-2057.

Full Text: [2004\Ame J Gas99, 2051.pdf](2004/Ame%20J%20Gas99,%202051.pdf)

Abstract: BACKGROUND: Self-expanding metal stents have been used in the management of colorectal obstruction as an alternative to emergency surgery. Our aim was to systematically review the efficacy and safety of these stents in the setting of malignant colorectal obstruction. METHODS: Both English and foreign language reports were identified from Medline, Embase, Cancerlit, Science Citation Index, Cochrane Library, and proceedings of relevant meetings. Data were collected on technical success, clinical success, and safety parameters. RESULTS: Fifty-four studies reported the use of stents in a total of 1,198 patients. The median technical and clinical success rates were 94% (i.q.r. 90-100) and 91% (i.q.r. 84-94), respectively. The clinical success when used as a bridge to surgery was 71.7%. Major complications related to stent placement included perforation (3.76%), stent migration (11.81%), and reobstruction (7.34%). Factors related to an increased complication risk were identified. Stent-related mortality was 0.58%. Limited available data suggest that this approach may be cost effective in the preoperative setting. CONCLUSION: Placement of self-expanding metal stents is an effective and safe definitive procedure in the palliation of malignant colorectal obstruction. In operable patients, it provides a useful option to avoid colostomy, by facilitating safer single-stage surgery.

Keywords: Cancer, Citation, Colonic Obstruction, Cost-Effectiveness, English, Follow-up, Language, Large-Bowel Obstruction, Management, Medline, Metal, Migration, Neoplastic Obstructions, Palliative Treatment, Placement, Review, Risk, Science, Science Citation Index, Surgery

? Take, S., Mizuno, M., Ishiki, K., Nagahara, Y., Yoshida, T., Yokota, K., Oguma, K., Okada, H. and Shiratori, Y. (2005), The effect of eradicating helicobacter pylori on the development of gastric cancer in patients with peptic ulcer disease. *American Journal of Gastroenterology*, **100** (6), 1037-1042.

Full Text: Ame J Gas100, 1037.pdf

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Full Text: [2005\Ame J Gas100, 1345.pdf](2005/Ame%20J%20Gas100,%201345.pdf)

Abstract: OBJECTIVES: We performed a systematic review with metaanalysis of observational studies evaluating the association between 5-ASA use and colorectal cancer (CRC) or dysplasia among patients with ulcerative colitis. METHODS: We conducted a search of Medline Embase Biosis, Web of Science, Cochrane Collaboration, manually reviewed the literature, and consulted with experts. Studies were included if they 1) evaluated and clearly defined exposure to 5-aminosalicylates in patients with ulcerative colitis, 2) reported CRC or dysplasia outcomes, 3) reported relative risks or odds ratio or provided data for their calculations. Quantitative analysis using a random-effects model is presented. RESULTS: Nine studies (3 cohort, 6 case-control) containing 334 cases of CRC, 140 cases of dysplasia, and a total of 1,932 subjects satisfied all inclusion criteria. Five studies reported CRC outcomes alone, two studies reported separate cancer and dysplasia outcomes, and two studies reported a combined outcome of CRC or dysplasia. All primary estimates are homogenous. Pooled analysis showed a protective association between use of 5-aminosalicylates and CRC (OR = 0.51; 95% confidence interval (CI): 0.37-0.69) or a combined endpoint of CRC/dysplasia (OR 0.51; 95% CI: 0.38-0.69). 5-ASA use was not associated with a lower risk of dysplasia, although only two studies evaluated this outcome (OR = 1.18; 95% CI: 0.41-3.43). CONCLUSION: Pooled results of observational studies support a protective association between 5-aminosalicylates and CRC or a combined endpoint of CRC/dysplasia in patients with ulcerative colitis. Additional studies analyzing the effect of 5-ASA on risk of dysplasia are needed.

Keywords: Acid, Analysis, Cancer, Clinical-Trials, Cochrane, Collaboration, Colorectal Cancer, Inflammatory-Bowel-Disease, Literature, Model, Neoplasia, Nonsteroidal Antiinflammatory Drugs, Observational Studies, Outcome, Outcomes, Pooled Analysis, Prevention, Primary, Primary Sclerosing Cholangitis, Ratio, Review, Risk, Science, Sulfasalazine, Supplementation, Systematic, Systematic Review, Ulcerative Colitis, Ulcerative-Colitis, Web of Science

? Gluud, L.L., Sorensen, T.I.A., Gotzsche, P.C. and Gluud, C. (2005), The journal impact factor as a predictor of trial quality and outcomes: Cohort study of hepatobiliary randomized clinical trials. *American Journal of Gastroenterology*, **100** (11), 2431-2435.

Full Text: [2005\Ame J Gas100, 2431.pdf](2005/Ame%20J%20Gas100,%202431.pdf)

Abstract: OBJECTIVES: To examine the association between the impact factor and characteristics of hepatobiliary randomized clinical trials. METHODS: A cohort study of 530 hepatobiliary randomized clinical trials was performed. The journal impact factor was extracted from Science Citation Index. For each trial, we extracted the sample size, the quality of randomization and blinding methods, and the statistical significance of the primary outcome measure. RESULTS: The median sample size was 45 participants (interquartile range 25-88). The allocation sequence generation was adequate in 273 trials (52%). Allocation concealment was adequate in 178 trials (34%). The primary outcome measure was statistically significant in 374 (71%) trials. Nonparametric analyses for trend indicated that the impact factor was significantly associated with the sample size (p < 0.01) and the proportion of trials with adequate allocation sequence generation (p < 0.01) or allocation concealment (p= 0.02). The impact factor was not significantly associated with the study outcome (p= 0.28). CONCLUSIONS: The present study supports the use of the impact factor as a rough quality indicator. However, even trials in high impact journals may be small or may have inadequate quality. Critical appraisal of individual trials is always necessary, irrespective of the place of publication.

Keywords: Allocation, Analyses, Association, Characteristics, Clinical, Clinical Trials, Cohort, Cohort Study, Generation, Impact, Impact Factor, Indicator, Journal, Journal Impact, Journal Impact Factor, Journals, Methods, Objectives, Outcome, Outcomes, Primary, Publication, Quality, Quality of, Randomization, Randomized, Sample Size, Science Citation Index, Significance, Size, Small, Trend, Trial

? Shi, J., Wu, C., Lin, Y., Chen, Y.X., Zhu, L. and Xie, W.F. (2006), Long-term effects of mid-dose ursodeoxycholic acid in primary biliary cirrhosis: A meta-analysis of randomized controlled trials. *American Journal of Gastroenterology*, **101** (7), 1529-1538.

Full Text: [2006\Ame J Gas101, 1529.pdf](2006/Ame%20J%20Gas101,%201529.pdf)

Abstract: OBJECTIVES: The effect of ursodeoxycholic acid (UDCA) treatment on survival and liver histological progression of primary biliary cirrhosis (PBC) remains uncertain. The aim of this study is to assess the long-term efficacy of mid-dose UDCA treatment for PBC. METHODS: Electronic databases including Medline, Embase, Cochrane controlled trials register, Science Citation Index, and PUBMED (updated to Nov 2005), and manual bibliographical searches were conducted. A meta-analysis of all long-term randomized controlled trials (RCTs) comparing mid-dose UDCA with placebo or no treatment was performed. RESULTS: Seven RCTs and six reports of their extended follow-up including 1,038 patients were assessed. UDCA could significantly improve liver biochemistry, but had no effect on pruritus and fatigue. UDCA could delay the progression of PBC, especially for early-stage patients. Meta-analysis of the seven RCTs including their extended follow-up showed a significant reduction of the incidence of liver transplantation (OR 0.65, p = 0.01), and a marginally significant reduction of the rate of death or liver transplantation (fixed-effect model: OR 0.76, p = 0.05; random-effect model: OR 0.77, p = 0.3) in the UDCA group, except death (OR 1.01, p = 1). In the sensitivity analyses, which included studies administrating placebo as control, long-term studies (>= 48 months), or large size studies (total number of patients >= 100), we all found long-term treatment with UDCA could significantly reduce the incidence of liver transplantation, and death or liver transplantation. CONCLUSIONS: Long-term treatment with mid-dose UDCA can improve liver biochemistry and survival free of liver transplantation in patients with PBC. In addition, UDCA therapy can delay the histological progression in the early-stage patients.

Keywords: Citation, Clinical-Trials, Colchicine, Control, Databases, Death, Double-Blind, Follow-up, Liver, Medline, Meta-Analysis, Model, Multicenter Trial, Placebo-Controlled Trial, Progression, Quality, Randomized Controlled Trials, Reduction, Science, Science Citation Index, Survival, Therapy, Treatment, Ursodiol

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Full Text: 2006\Ame J Gas101, 2619.pdf

Abstract: BACKGROUND: Gastroesophageal reflux disease (GERD) is a common cause of morbidity and health-care utilization in many countries. Obesity is a potentially modifiable risk factor, but existing studies have conflicting results, possibly due to differences in study design, definitions, or populations. METHODS: We performed a systematic review and meta-analysis of studies identified using MEDLINE, the Web of Science electronic database, manual literature review, and a review of expert bibliographies. Studies were included if they: (1) evaluated obesity, body mass index (BMI), or another measure of body size; (2) included data on reflux symptoms, esophagitis, or a GERD-related hospitalization; and (3) reported a relative risk or odds ratio (OR) with confidence intervals or provided sufficient data to permit their calculation. RESULTS: We identified 20 studies that included 18,346 patients with GERD. Studies from the United States demonstrated an association between increasing BMI and the presence of GERD (95% confidence interval [CI] = 1.36-1.80, overweight, OR = 1.57, P value homogeneity = 0.51, 95% CI = 1.89-2.45, obese, OR = 2.15, P = 0.10). Studies from Europe provided heterogeneous results despite stratification for several factors; individual studies demonstrated both positive associations and no association. CONCLUSIONS: This analysis demonstrates a positive association between increasing BMI and the presence of GERD within the United States; this relationship became apparent only after stratification by country and level of BMI. These results support the evaluation of weight reduction as a potential therapy for GERD. Further studies are needed to evaluate potential mechanisms and any differences in this relationship among different study populations.

Keywords: Analysis, Bmi, Body Mass Index, Confidence Intervals, Controlled Clinical-Trials, Definitions, Disease, Erosive Esophagitis, Esophageal Adenocarcinoma, Europe, Evaluation, Gastric Cardia, Health Care, Hiatal-Hernia, Hospitalization, Literature, Literature Review, Medline, Meta-Analysis, Morbidity, Obesity, Overweight, Ratio, Regional Variation, Relative Risk, Review, Rising Incidence, Risk, Risk-Factors, Science, Symptoms, Systematic, Systematic Review, Therapy, United-States, Utilization, Web of Science

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Full Text: [2007\Ame J Gas102, 1528.pdf](2007/Ame%20J%20Gas102,%201528.pdf)

Abstract: OBJECTIVES: The objective of this review was to evaluate the efficacy and safety of rifampin, opioid antagonists, or bile acid binding agents in the treatment of cholestasis-related pruritus (CAP) from available randomized controlled trial evidence. METHODS: In addition to a comprehensive gray literature search, the Cochrane Library, MEDLINE, EMBASE, PubMed, and Web of Science were searched. Only full-text RCTs in participants (> 75% adult) with CAP on at least one of the three medications were included. The primary outcome was change in pruritus score, recorded as a continuous or dichotomous outcome. Two independent reviewers performed trial selection and quality assessment. RESULTS: From 487 citations, 12 RCTs were included. Rifampin (standardized mean difference [SMD] -1.62, 95% CI -3.05 to -0.18) and opioid antagonists (SMD -0.68, 95% CI -1.19 to -0.17) significantly reduced CAP. The two cholestyramine studies were too heterogeneous to pool. Although cholestyramine (P = 0.35) and rifampin (P = 0.96) were not associated with greater side effects compared with placebo, opioid antagonists were (number needed to harm = 2.6, 95% CI 1.4-25). CONCLUSIONS: The available RCTs are small, few in number, and use varying scales for measuring pruritus. Although both opioid antagonists and rifampin demonstrated a reduction in pruritus, there were insufficient data to judge the efficacy of cholestyramine. Opioid antagonists were associated with transient side effects in a significant proportion of patients. A longer well-designed randomized controlled trial is needed to confirm the efficacy of bile acid binding agents and accurately assess adverse events.

Keywords: Adult, Assessment, Cholestyramine, Citations, Cochrane, Controlled-Trial, Double-Blind, Efficacy, Embase, Intrahepatic Cholestasis, Literature, Liver-Disease, Malignant Cholestasis, Medline, Opiate Antagonist, Opioid, Oral Naltrexone Treatment, Outcome, Primary, Primary Biliary-Cirrhosis, Pubmed, Randomized Controlled Trial, Review, Safety, Science, Treatment, Ursodeoxycholic Acid, Web of Science, Withdrawal-Like Reactions

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Full Text: [2008\Ame J Gas103, 104.pdf](2008/Ame%20J%20Gas103,%20104.pdf)

Abstract: BACKGROUND: There is no agreement whether intravenous prophylactic antibiotics can reduce infected pancreatic necrosis and mortality in acute necrotizing pancreatitis (ANP). We performed a meta-analysis comparing intravenous antibiotics with placebo or no treatment in randomized controlled trials (RCTs). METHODS: Databases including MEDLINE, EMBASE, the Cochrane controlled trials register, the Cochrane Library, and Science Citation Index were searched to find relevant trials. Outcome measures were infected necrosis and mortality. RESULTS: Seven trials involving 467 patients were included. Analysis suggested infected pancreatic necrosis rates were not significantly different (antibiotics 17.8%, controls 22.9%), RR 0.81 (95% CI 0.54-1.22). There was nonsignificantly decreased mortality with antibiotics (9.3%) versus controls (15.2%), RR 0.70 (95% CI 0.42-1.17). Subsequent subgroup analysis confirmed antibiotics were not statistically superior to controls in reduction of infected necrosis and mortality. CONCLUSIONS: Prophylactic antibiotics cannot reduce infected pancreatic necrosis and mortality in patients with ANP.

Keywords: Antibiotics, Bias, Citation, Clinical-Trial, Databases, Double-Blind, Efficacy, Evidence, Imipenem, Management, Medline, Meta-Analysis, Placebo, Quality, Reduction, Science, Science Citation Index, Surgery, Treatment

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Full Text: [2008\Ame J Gas103, 3195.pdf](2008/Ame%20J%20Gas103,%203195.pdf)

Abstract: BACKGROUND: Clostridium difficile infection (CDI) is a frequent cause of morbidity and mortality among elderly hospitalized patients. A small but increasing number of patients have developed fulminant CDI, and a significant number of these patients require emergency colectomy. In this review, we discuss the risk factors, pathophysiology, diagnosis, and management of fulminant CDI. DATA SOURCES: A literature search (Medline, Embase, Cochrane Library, Biosis, Science Citation Index, Ovid Journals) was performed from the period between January 1980 and June 2008 using the key words “Clostridium difficile,” “pseudomembranous enterocolitis,” “colectomy,” “acute abdomen,” “antibiotic-associated diarrhea,” or “fulminant Clostridium difficile colitis.” Articles not in English or not related to human subjects were excluded. For this review, we analyzed the articles identified in our original search and those articles cited in the original review articles. No randomized trials were found on the surgical management of fulminant CDI and only retrospective studies with a minimum of five patients were used in the review. With respect to medical treatment, we based our review on guideline articles, systematic reviews, and available randomized trials. CONCLUSION: Both the incidence and severity of CDI are increasing. Fulminant CDI is underappreciated as a life-threatening disease because of a lack of awareness of its severity and its nonspecific clinical syndrome. Early diagnosis and treatment are essential for a good outcome, and early surgical intervention should be used in patients who are unresponsive to medical therapy. The surgical procedure of choice is a total abdominal colectomy with end ileostomy, although the mortality rate remains high. (Am J Gastroenterol 2008;103:3195-3203).

Keywords: Acute Abdomen, Antibiotic-Associated Diarrhea, Articles, Awareness, Citation, Clostridium, Critically-ILL, Diagnosis, Elderly, English, Hospitalized-Patients, Hypervirulent Strain, Intervention, Intracolonic Vancomycin, Journals, Literature, Management, Medical, Medline, Pseudomembranous Colitis, Review, Risk, Risk Factors, Risk-Factors, Science, Science Citation Index, Surgical Disease, TOX A, B Test, Treatment

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Full Text: [2009\Ame J Gas104, 1548.pdf](2009/Ame%20J%20Gas104,%201548.pdf)

Abstract: OBJECTIVES: The aim of this study was to conduct a meta-analysis of randomized evidence to determine the relative merits of laparoscopic anti-reflux surgery (LARS) and open anti-reflux surgery (OARS) for proven gastro-esophageal reflux disease (GERD). METHODS: A search of the Medline, Embase, Science Citation Index, Current Contents, and PubMed databases identified all randomized clinical trials that compared LARS and OARS and that were published in the English language between 1990 and 2007. A meta-analysis was carried out in accordance with the QUOROM (Quality of Reporting of Meta-Analyses) statement. The six outcome variables analyzed were operating time, hospital stay, return to normal activity, perioperative complications, treatment failure, and requirement for further surgery. Random-effects meta-analyses were carried out using odds ratios (ORs) and weighted mean differences (WMDs). RESULTS: Twelve trials were considered suitable for the meta-analysis. A total of 503 patients underwent OARS and 533 had LARS. For three of the six outcomes, the summary point estimates favored LARS over OARS. There was a significant reduction of 2.68 days in the duration of hospital stay for the LARS group compared with that for the OARS group (WMD: -2.68, 95% confidence interval (CI): -3.54 to -1.81; P<0.0001), a significant reduction of 7.75 days in return to normal activity for the LARS group compared with that for the OARS group (WMD: -7.75, 95% CI: -14.37 to -1.14; P=0.0216), and finally, there was a statistically significant reduction of 65% in the relative odds of complication rates for the LARS group compared with that for the OARS group (OR: 0.35, 95% CI: 0.16-0.75; P=0.0072). The duration of operating time was significantly longer (39.02 min) in the LARS group (WMD: 39.02, 95% CI: 17.99-60.05; P=0.0003). Treatment failure rates were comparable between the two groups (OR: 1.39, 95% CI: 0.71-2.72; P=0.3423). Despite this, the requirement for further surgery was significantly higher in the LARS group (OR: 1.79, 95% CI: 1.00-3.22; P=0.05). CONCLUSIONS: On the basis of this meta-analysis, the authors conclude that LARS is an effective and safe alternative to OARS for the treatment of proven GERD. LARS enables a faster convalescence and return to productive activity, with a reduced risk of complications and a similar treatment outcome, than an open approach. However, there is a significantly higher rate of re-operation (79%) in the LARS group.

Keywords: Bias, Conventional Nissen Fundoplication, Cost, Dysphagia, Follow-up, Gastroesophageal-Reflux Disease, Heterogeneity, Quality, Redo, Repair

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Full Text: [2011\Ame J Gas106, 699.pdf](2011/Ame%20J%20Gas106,%20699.pdf)

Abstract: OBJECTIVES: Crohn’s disease is often purely inflammatory at presentation, but most patients develop strictures and fistulae over time (complicated disease). Many studies have suggested that nucleotide-binding oligomerization domain 2 (NOD2) mutations are associated with a varying but increased risk of complicated disease. An accurate and sufficiently powerful predictor of complicated disease could justify the early use of biological therapy in high-risk individuals. We performed a systematic review and meta-analysis to obtain accurate estimates of the predictive power of the identified mutations (such as p.R702W, P.G908R, and p.Leu1007fsX1008) in NOD2 for the risk of complicated disease. METHODS: An electronic search of MEDLINE, Embase, and Web of Science identified 917 relevant papers. Inclusion required specification of genetic mutations at the individual level and disease phenotypes by Vienna classification (inflammatory (B1), stricturing (B2), and fistulizing (B3)). A total of 49 studies met these criteria, which included 8,893 subjects, 2,897 of whom had NOD2 mutations. Studies were weighted by median disease duration. Studies not providing duration data were weighted at the level of the study with the shortest disease duration (3.9 years). RESULTS: The relative risk (RR) of the presence of any NOD2 mutant allele for complicated disease (B2 or B3) was 1.17 (95% confidence interval (95 % CI) 1.10-1.24; P < 0.001). P.G908R was associated with an RR of complicated disease of 1.33 (95 % CI 1.11-1.60; P = 0.002). NOD2 did not predict perianal disease (P = 0.4). The RR of surgery was 1.58 (95 % CI 1.38-1.80; P < 0.001). There was substantial heterogeneity across all studies (I(2) = 66.7 %). On the basis of logistic regression of these data, the sensitivity of any mutation in predicting complicated disease was 36% and specificity was 73 %, with the area under the receiver operating characteristic curve 0.56. CONCLUSIONS: The presence of a single NOD2 mutation predicted an 8 % increase in the risk for complicated disease (B2 or B3), and a 41 % increase with 2 mutations. Surgery risk is increased by 58 % with any NOD2 mutation, whereas perianal disease was unchanged. The predictive power associated with a single NOD2 mutation is weak. The RR of any NOD2 mutations for complicated disease was only 17 % across 36 studies. However, the presence of two NOD2 mutations had 98 % specificity for complicated disease. These data provide insufficient evidence to support top-down therapy based solely on single NOD2 mutations, but suggest that targeted early-intensive therapy for high-risk patients with two NOD2 mutations might be beneficial, if prospective trials can demonstrate changes in the natural history in this subset of patients.

Keywords: Card15 Gene, Crohn’s Disease, Disease, Frameshift Mutation, Genetic, High-Risk Patients, History, Inflammatory-Bowel-Disease, Insertion Mutation, Italian Population, Medline, Meta-Analysis, NOD2, Card15 Gene Polymorphisms, Papers, Phenotype Analysis, Relative Risk, Review, Risk, Science, Spanish Population, Surgery, Susceptibility Loci, Systematic, Systematic Review, Therapy, Web of Science, Working Party

# Title: American Journal of Geriatric Pharmacotherapy

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Full Text: [2009\Ame J Ger Pha7, 293.pdf](2009/Ame%20J%20Ger%20Pha7,%20293.pdf)

Abstract: Background: Fractures are a significant problem in geriatric patients, and understanding the evidence for benefit and possible harm of osteoporosis treatments is critical to appropriate management of tills patient population. Objective: The purpose of this article was to review the evidence and treatment considerations related to use of the approved osteoporosis treatments in the United States across the continuum of ages in the geriatric population. Methods: MEDLINE and the Web of Science were searched to find English-language articles published from 2000 through July 2009. Search terms included: practice guideline, osteoporosis, calcium, vitamin D, pharmacoeconomics, ethnicity, and treatment. The generic names of each of the osteoporosis treatments approved in the United States were searched to find relevant clinical trials and randomized controlled trials (RCTs). Pivotal trials that included fracture data or focused specifically on elderly patients (>= 60 years of age) were selected. Bibliographies in the identified articles were searched for additional articles, and the prescribing information for each of the approved treatments was reviewed. Results: Many osteoporosis studies have a mean patient age >60 years, but data for older patients are limited. Subanalyses of older patient groups have found risedronate to be beneficial for vertebral fractures in patients aged 70 to 79 years (absolute risk reduction [ARR], 8.4%; P < 0.001) and teriparatide to be beneficial for both vertebral (ARR, 6.4%; P < 0.05) and new nonvertebral fragility fractures (ARR, 9.9%; P < 0.05) in women aged :75 years. However, no RCTs of geriatric patients who were either nonambulatory or had multiple comorbidities were identified in the literature. Conclusions: Evidence indicates that the osteoporosis treatments Currently available in the United States are beneficial for treating osteoporosis in geriatric patients. However, data are limited for the oldest patients (>= 80 years) and those with significant comorbidities. Because of the limited availability of data for geriatric patients with significant comorbidities, the properties of the various agents, including efficacy, tolerability, and potential contraindications, should be considered carefully for each geriatric patient. (Am J Geriatr Pharmacother. 2009;7:293-323) (C) 2009 Excerpta Medica Inc.

Keywords: Aged, Alendronate 70 Mg, Bibliographies, Bone-Mineral Density, Calcium, Clinical Trials, Clinical-Practice Guideline, Efficacy, Elderly, Ethnicity, Falls, Fracture, Geriatric, Information, Literature, Management, Medline, Methods, Nitrogen-Containing Bisphosphonates, Older Patients, Osteoporosis, Parathyroid-Hormone, Pharmacoeconomics, Postmenopausal Osteoporosis, Practice, Prior Antiresorptive Treatment, Randomized Controlled Trials, Randomized-Trial, Review, Risk, Risk Reduction, Science, Treatment, Vertebral Fracture Risk, Vitamin D, Vitamin-D Supplementation, Web of Science, Women

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Full Text: [2010\Ame J Ger Pha8, 4.pdf](2010/Ame%20J%20Ger%20Pha8,%204.pdf)

Abstract: Background: Vitamin D insufficiency is prevalent among older adults and may be associated with higher risk for cardiovascular (CV) disease, mortality, depression, and cognitive deficits. Objective: The aim of this article was to review published observational and experimental Studies that explored the association between vitamin D insufficiency and CV disease, mortality, mood, and cognition with an emphasis on older adults. Methods: PubMed and Web of Science databases were searched for English-language articles from January 1966 through June 2009 relating to vitamin D, using the following MeSH terms: aged, vitamin D deficiency, physiopathology, drug therapy, cardiovascular diseases, blood pressure, mortality, delirium, dementia, cognitive disorders, depression, depressive disorder, seasonal affective disorder, mental disorders, and vitamin D/therapeutic use. Publications had to include patients 65 years of age who had >= 1 recorded measurement of 25-hydroxyvitamin D (25[OH]D) or were receiving vitamin D supplementation. All case-control, cohort, and randomized studies were reviewed. Results: Forty-two case-control, cohort, and randomized trials were identified and included in the review. Based on these publications, the prevalence of vitamin D insufficiency (25[OH]D concentration <30 ng/mL) in community-dwelling older adults (>= 65 years of age) ranged from 40% to 100%. Epidemiologic data and several small randomized trials found a potential association between vitamin D deficiency (25[OH]D concentration <10 ng/mL) and CV disease, including hypertension and ischemic heart disease. Although subgroup analyses of data from the Women’s Health Initiative Randomized Trial (the largest randomized, placebo-controlled trial of vitamin D Plus calcium therapy) did not find reductions in blood pressure, myocardial infarction, or CV disease-related deaths, intervention contamination limited the findings. Observational Studies and a meta-analysis of randomized controlled trials found a mortality benefit associated with higher serum 25(OH)D concentrations or vitamin D(2) or D(3) supplementation (mean dose, 528 IU/d). Observational and small randomized trials found a potential benefit of sunlight or vitamin D on symptoms of depression and cognition, but the findings were limited by methodologic problems. Conclusions: Vitamin D insufficiency appears to be highly prevalent among older adults. Evidence from epidemiologic studies and small clinical trials suggests an association between 25(OH)D concentrations and systolic blood pressure, risk for CV disease-related deaths, symptoms of depression, cognitive deficits, and mortality. The Women’s Health Initiative Randomized Trial did not find a benefit of vitamin D supplementation on blood pressure, myocardial infarction, or mortality in postmenopausal women. (Am J Geriatr Pharmacother. 2010;8:4-33) (C) 2010 Excerpta Medica Inc.

Keywords: 3rd National-Health, Adults, Aged, Blood, Blood Pressure, Blood-Pressure, Calcium, Cardiovascular, Cardiovascular Diseases, Clinical Trials, Cognition, Cognitive Disorders, D Deficiency, D Supplementation, Databases, Dementia, Depression, Disease, Disorder, Drug, Epidemiologic Studies, Health, Hypertension, Incident Hypertension, Intervention, Measurement, Mental Disorders, Meta-Analysis, Methods, Mood, Mortality, Myocardial Infarction, Nutrition Examination Survey, Older Adults, Parathyroid-Hormone Levels, Postmenopausal Women, Pressure, Prevalence, Publications, Pubmed, Randomized Controlled Trials, Randomized Controlled-Trials, Review, Risk, Science, Serum 25-Hydroxyvitamin-D, Symptoms, Therapy, Vitamin D, Vitamin D Deficiency, Web of Science, Women

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Full Text: [2010\Ame J Ger Pha8, 514.pdf](2010/Ame%20J%20Ger%20Pha8,%20514.pdf)

Abstract: Background: Multiple studies have addressed the treatment of chronic constipation in adults in general; however, less guidance is available for treating this condition in older patients. Objective: The aim of this paper was to review the effectiveness of laxatives for chronic constipation in the elderly Methods: MEDLINE, Web of Science, International Pharmaceutical Abstracts, and the Cochrane Database of Systematic Reviews were searched for English-language articles evaluating the treatment of chronic constipation in older individuals from the inception of the databases until October 2010. Search terms included constipation, treatment, laxative, elderly, and geriatric. Articles were excluded if the mean age was <65 years. Results: Thirty-one trials were identified. These studies varied widely in terms of methodology, quality, sample size, efficacy end points, and duration. Mean stool frequency was 9.08 bowel movements per week with psyllium and 8.29 per week with calcium polycarbophil (P = 0.04). Docusate sodium daily, docusate sodium q12h, and docusate calcium daily for 3 weeks produced a mean stool frequency of 1.95 bowel movements per week versus 1.50 for placebo (P = NS), 2.29 versus 1.76 (P = NS), and 2.83 versus 1.75 (P < 0.02), respectively. Mean stool frequency with lactulose versus placebo was 0.7 and 0.5 bowel movements per day (P < 0.02). In patients receiving polyethylene glycol or lactulose, mean stool frequency was 1.3 and 0.9 bowel movements per day (P = 0.005). In a study comparing senna plus a bulking agent with lactulose, mean stool frequency was 4.5 per week for the combination product versus 2.2 per week for lactulose (P < 0.001). A study comparing sodium picosulfate with senna reported a mean stool frequency of 0.71 and 0.63 per day (P value not reported). Lubiprostone was associated with 5.69 spontaneous bowel movements per week versus 3.46 per week for placebo (P = 0.001). Conclusions: Higher-quality trials evaluating the treatment of constipation in older patients are needed to create a basis for more definitive recommendations in this population. The approach to older adults with constipation should be individualized. (Am J Geriatr Pharmacother. 2010;8:514-550) (C) 2010 Elsevier HS Journals, Inc.

Keywords: Adults, Articles, Balanced Solution Pmf-100, Calcium, Calcium Polycarbophil, Chloride Channel Activator, Chronic Idiopathic Constipation, Cochrane, Constipation, Databases, Double-Blind, Effectiveness, Efficacy, Elderly, Frequency, Gastrointestinal Transit-Time, Geriatric, Laxatives, Medline, Methodology, Methods, Older Adults, Older Patients, Placebo-Controlled Trial, Points, Quality-of-Life, Review, Science, Stay Elderly Patients, Stool Softeners, Systematic, Treatment, United-States, Web of Science

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Full Text: [2007\Ame J Hea Beh31, S47.pdf](2007/Ame%20J%20Hea%20Beh31,%20S47.pdf)

Abstract: Objective: To summarize existing research on individual numeracy and methods for presenting risk information to patients. Methods: We selectively retrieved articles from MEDLINE and the Social Sciences Citation Index. Results: Many Americans have low numeracy skills, a deficit that impedes effective health care. Approaches to risk communication vary in current practice, but how risks are presented can significantly affect both patients’ risk perceptions and their knowledge. Conclusions: Adhering to some basic principles for presenting risk information to patients can improve understanding. However, different risk-communication methods may be needed for individuals with high versus low levels of numeracy.

Keywords: Care, Communication, Health, Health Care, Information, Knowledge, MEDLINE, Methods, Patients, Practice, Principles, Research, Risk, Risk Information, Risks, Understanding

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Subject Categories:

: Impact Factor

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Full Text: [2003\Ame J Hea Pro17, 304.pdf](2003/Ame%20J%20Hea%20Pro17,%20304.pdf)

Abstract: Purpose. To conduct a systematic review of the peer-reviewed literature on the Trans-theoretical Model (TTM) and pregnancy and STD prevention. Data Sources. Computer database search (Applied Social Science Index and Abstracts [ASSIA], Biological Abstracts, Criminal Justice Abstracts, CINAHL-Allied Health, Current Contents, Current Index to Journals in Education, Education Index, ERIC, Excerpta Medica, Family Index, Index Medicus, Medline, Multicultural Education Abstracts, PsychInfo, Psychological Abstracts, Research Alert, Social Science Citation Index, Social Work Abstracts, and Sociological Abstracts), and manual journal search. Study Inclusion and Exclusion Criteria. All English, peer-reviewed, original articles on the TTM as it relates to Pregnancy and STD prevention published prior to December 31, 2001, were included. Editorials, commentaries, theses/dissertations, unpublished studies, technical reports, and books were not included. Data Extraction Methods. Articles were categorized as Intervention, Population (stage distribution), or Validation studies. Within each category, articles were subdivided into groups, summarized, and analyzed. Data Synthesis. The 32 articles reviewed included 9 intervention studies, 11 population studies, and 12 validation studies. Studies represented a variety of U.S. populations of a broad demographic range. Evidence both for and against criterion-related and construct validity of the TTM was found. Major Conclusions. Age, partner type, gender, reasons for engaging in safer sex behaviors (i.e., pregnancy vs. disease prevention), self-efficacy, sexual assertiveness, and perceived of condom use were related to stage of change. The use of the TTM to reduce risk of pregnancy and STDs is a relatively new, but important, area of research. However, because of the wide-ranging differences in methodologies and samples, no strong conclusions about its effectiveness can yet be made.

Keywords: Age, Citation, Condom Use Adoption, Contraceptive Use, Decisional Balance, Drug-Users, HIV Prevention, Intervention, Journal, Literature, Pregnancy, Prevention Research, Rural South, Self-Efficacy, Sexual Risk Reduction, STD Prevention, Transtheoretical Model, Women

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Full Text: [2003\Ame J Hea Pro18, 21.pdf](2003/Ame%20J%20Hea%20Pro18,%2021.pdf)

Abstract: Purpose. This paper reviews existing environmental audit instruments used to capture the walkability and bikability of environments. The review inventories and evaluates individual measures of environmental factors used in these instruments. It synthesizes the current state of knowledge in quantifying the built environment. The paper provides health promotion professionals an understanding of the essential aspects of environments influencing walking and bicycling for both recreational and transportation purposes. It serves as a basis to develop valid and efficient tools to create activity-friendly communities. Data Sources. Keyword searches identified journal articles from the computer-based, Academic Citation Databases, including the National Transportation Library, the Web of Science Citation Database, and MEDLINE. Governmental publications and conference proceedings were also searched. Study Inclusion and Exclusion Criteria. All instruments to audit physical environments have been included in this review, considering both recreation- and transportation-related walking and bicycling. Excluded are general methods devised to estimate walking and cycling trips, those used in empirical studies on land use and transportation, and research on walking inside buildings. Data Extraction Methods. Data have been extracted from each instrument using a template of key items developed for this review. The data were examined for quality assurance among three experienced researchers. Data Synthesis. A behavioral model of the built environment guides the synthesis according to three components: the origin and destination of the walk or bike trip, the characteristics of the road traveled, and the characteristics of the areas surrounding the trip’s origin and destination, These components, combined with the characteristics of the instruments themselves, lead to a classification of the instruments into the four categories of inventory, route quality assessment, area quality assessment, and approaches to estimating latent demand for walking and bicycling. Furthermore, individual variables used in each instrument to measure the environment are grouped into four classes: spatiophysical, spatiobehavioral, spatiopsychosocial, and polity-based. Major Conclusions. Individually, existing instruments rely on selective classes of variables and therefore assess only parts of built environments that affect walking and bicycling. Most of the instruments and individual measures have not been rigorously tested because of a lack of available data on walking and bicycling and because of limited research budgets. Future instrument development will depend an the acquisition of empirical data on walking and bicycling, on inclusion of all three components of the behavioral model, and on consideration of all classes of variables identified.

Keywords: Assessment, Biking, Citation, Databases, Determinants, Development, Environment, Environmental, Environmental Audit Instruments, Evaluation, Exercise, Extraction, Health Promotion, Journal, Knowledge, Lead, Medline, Methods, Model, Physical Environmental Factors, Physical-Activity, Preferences, Prevention Research, Promotion, Publications, Research, Researchers, Review, Science, Sources, Travel-Related And Recreation-Related Walking And Bicycling, Walking, Web of Science

? Matson-Koffman, D.M., Brownstein, J.N., Neiner, J.A. and Greaney, M.L. (2005), A site-specific literature review of policy and environmental interventions that promote physical activity and nutrition for cardiovascular health: What works? *American Journal of Health Promotion*, **19** (3), 167-193.

Full Text: 2005\Ame J Hea Pro19, 167.pdf

Abstract: Objective. To review the literature to determine whether policy and environmental interventions can increase people’s physical activity or improve their nutrition. Data Source. The following database were searched for relevant intervention studies: Medline, Chronic Disease Prevention File, PsychInfo, Health Star, Web of Science, ERIC, the U.S Department of Transportation, and the U.S Department of Agriculture. Study Selection. To be included in the review, studies must have (1) addressed policy or environmental interventions to promote physical activity and or good nutrition; (2) been published from 1970 to October 2003; (3) provided a description of the intervention; and (4) reported behavioral, physiological, or organizational change outcomes. Studies that had inadequate interventions descriptions or that focused on determinants research, individual-level interventions only, the built environment, or media-only campaigns were excluded. Data Extraction. We extracted and summarized studies conducted before 1990 (n = 65) and during 1990-2003 (n = 64). Data Synthesis. Data were synthesized by topic (i.e., physical activity or nutrition), by type of intervention (i.e., point-of-purchase), and by setting (i.e., community, health care facility, school, worksite). Current studies published during 1990-2003 are described in more detail, including setting and location, sample size and characteristics, intervention to show the strength of the study designs and the associations of policy and environmental interventions with physical activity and nutrition. Conclusion. The results of our review suggest that policy and environmental strategies may promote physical activity and good nutrition. Based on the experimental and quasi-experimental studies in this reviews, the following interventions provide the strongest evidence for influencing these behaviors: prompts to increase stair use (N = 5); access to places and opportunities for physical activity (N = 6); school-based physical education(PE) with better-trained PE teachers, and increased length of time students are physically active (N = 7); comprehensive work-site approaches, including eduction, employee and peer support for physical activity, incentives, and access to exercise facilities (N = 5); the availability of nutritious foods (N = 33), point-of-purchase strategies (N = 29); and systemalic officer reminders and training of health care providers to provide nutritional counseling (N = 4). Further research is needed to determine the long-term effectiveness of different policy and environmental interventions with various populations and to identify the steps necessary to successfully implement these types of interventions.

Keywords: Cardiovascular, Cardiovascular Health, City Latino Community, Community-Based Intervention, Coronary-Heart-Disease, Determinants, Effectiveness, Environment, Environmental, Exercise, Extraction, Fruit And Vegetable Consumption, Health, Health Care, Incentives, Increase Fruit, Intervention, Intervention Studies, Interventions, Literature, Literature Review, Low-Fat Milk, North-Karelia Project, Nutrition, Outcomes, Physical Activity, Policy, Randomized Controlled-Trial, Reminders, Research, Review, Science, Stair Use, Students, Training, Vegetable Consumption, Web of Science, Worcester-Area Trial, Work-Site

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Full Text: [2005\Ame J Hea Pro20, 96.pdf](2005/Ame%20J%20Hea%20Pro20,%2096.pdf)

Abstract: Objective. We conducted a systematic review to examine the effectiveness of educational interventions in increasing mammography screening among low-income women. Data Sources. Bibliographic databases, including MEDLINE, The Cochrane Central Register of Controlled Dials, The Cochrane Database of Systematic Reviews, and the ISI Web of Science, were searched for relevant articles. Study Inclusion and Exclusion Criteria. Randomized, community-based trials targeting low-income women and published between January 1980 and March 2003 were included. Data Extraction. The search yielded 242 studies; 24 met all inclusion criteria. Data Synthesis. Three studies used mammography vans, three used low-cost vouchers or provided free mammograms, three used home visits, one used community education alone, one provided referrals, five incorporated multiple intervention strategies, two used phone calls, one used videos and print material, and five used primarily print material. Results. of nine studies that reduced barriers to care via mammography vans, cost vouchers, or home visits, eight showed statistically significant increases in mammography screening. Seven of the eight studies that used peer educators had significant increases in screening, as did four of the five studies that used multiple (intervention) components. Conclusions. Interventions that used peer educators, incorporated multiple intervention strategies, or provided easy access via vans, cost vouchers, or home visits were effective in increasing screenings. Mailed letter or telephone reminders were not effective in trials involving low-income women, which is contrary to findings from middle upper-income studies.

Keywords: African-American Women, Barriers, Bibliographic, Bibliographic Databases, Breast-Cancer, Cochrane, Databases, Education, Effective Interventions, Effectiveness, Extraction, Health Focus : Medical Self-Care, Health-Education, Inner-City, Intervention, Interventions, Invitation Strategies, ISI, Mammography Screening, Manuscript Format : Literature Review, Medline, Older Women, Prevention Research, Primary Variables : Behavioral, Program, Randomized Controlled Trial, Reminders, Review, Science, Screening, Screening Mammography, Setting : Local Community, Sources, Strategy : Skill Building, Behavior Change, Systematic, Systematic Review, Tailored Messages, Target Population : Adults and Seniors, Target Population Circumstances : Education, Income Level, Geographic Location,Race, Ethnicity, Web of Science, Women

? Turner, M.B., Vader, A.M. and Walters, S.T. (2008), An analysis of cardiovascular health information in popular young women’s magazines: What messages are women receiving? *American Journal of Health Promotion*, **22**, 183-186.

Full Text: [2008\Ame J Hea Pro22, 183.pdf](2008/Ame%20J%20Hea%20Pro22,%20183.pdf)

Abstract: Purpose. This study evaluated the consistency of cardiovascular health information in popular women’s magazines against the American Heart Association’s (AHA) guidelines for nutrition, physical activity, weight management, and smoking. Design. Six issues of four publications, Cosmopolitan, Glamour, Vogue, and Shape (24 total) were reviewed for inclusion. Setting. Content analysis was performed by two independent raters on 162 articles (283 instances of priority-related information). Measures. Articles were rated using a questionnaire developed from the AHA-recommended priorities. Analysis. Results are presented primarily in qualitative form, supplemented by analyses of variance and correlation significance tests when appropriate. Results. Physical activity was the most common topic, followed by nutrition, weight management, and cigarette smoking. Information about weight management was less consistent than other areas. Although publications varied widely in the frequency of coverage, there was no significant difference among them in overall consistency of the information. No articles gave information directly contrary to the AHA recommendations. Limitations include the subjective nature of the content analysis and the limited number of publications and time period for review. Conclusion. Women are receiving information related to diet, exercise, weight management, and cigarette smoking in popular magazines. However, the information is variable to the extent that it is consistent with evidence-based prevention guidelines.

Keywords: Analysis, Cardiovascular, Evidence Based, Guidelines, Health, Information, Management, Nutrition, Physical Activity, Prevention, Publications, Qualitative, Questionnaire, Recommendations, Review, Smoking, Women

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Full Text: 2010\Ame J Hea Pro24, 267.pdf

Abstract: Objective. To conduct a systematic review of the literature to examine the influence of the built environment (BE) on the physcial activity (PA) of adults in rural settings. Data Source. Key word searches of Academic Search Premier, PubMed, CINAHL, web of Science, and Sport Discus were conducted. Study Inclusion and Exclusion Criteria. Studies published prior to June 2008 were included if they assessed one or more elements of the BE, examined relationships between the BE and PA, and focused on rural locales. Studies only reporting descriptive statistics of assessing the reliability of measures were excluded. Data Extraction. Objective(s), sample size, sampling technique, geographic location, and definition of rural were extracted from each study, Methods of assessment and outcomes were extracted from the quantitative literature, and overarching themes were identified from the qualitative literature. Data Synthesis. Key characteristics and findings from the data are summarized in Tables 1 through 3. Results. Twenty studies met inclusion and exclusion criteria. Positive associations were found among pleasant aesthetics, trails, safety/crime, parks, and walkable destinations. Conclusions. Research in this area is limited. Associations among elements of the BE and PA among adults appear to differ between rural and urban areas. Considerations for future studies include identifying parameters used to define rural, longitudinal research, and more diverse geographic sampling. Development and refinement of BE assessment tools specific to rural locations are also warranted. (Am J Health Promot. 2010:[4]:267-283.).

Keywords: Adults, Aesthetics, African-American Women, Assessment, Belgian Adults, Built Environment, Environment, Ethnic-Groups, Extraction, Health, Health-Professionals, Literature, Methods, Neighborhood Environment, Northern California, Older-Adults, Outcomes, Physical Activity, Prevetion Research, Promoting Walking, Pubmed, Quantitative, Reliability, Research, Review, Rural, Science, South-Carolina, Statistics, Systematic, Systematic Review, United-States, Urban, Walking

# Title: American Journal of Health-System Pharmacy

Full Journal Title: American Journal of Health-System Pharmacy

ISO Abbreviated Title:

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ISSN:

Issues/Year:

Journal Country/Territory:

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Publisher Address:

Subject Categories:

: Impact Factor

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Full Text: [2007\Ame J Hea-Sys Pha64, 830.pdf](2007/Ame%20J%20Hea-Sys%20Pha64,%20830.pdf)

Abstract: Purpose. A meta-analysis of randomized, controlled trials that evaluated the effect of the macrolide antibiotic, azithromycin, on clinical outcomes in patients with coronary artery disease (CAD) was conducted. Methods. A systematic literature search of MEDLINE, EMBASE, Web of Science, and the Cochrane Database of Systematic Reviews was conducted using specific search terms. Randomized, controlled trials comparing azithromycin or placebo in secondary CAD patients with adequately reported data on mortality and clinical cardiac endpoints were included. A random-effects model was used. Results. Six studies (n = 13,77:3) met the inclusion criteria. The trials varied in their design. On meta-analysis, azithromycin resulted in a nonsignificant reduction in mortality versus placebo (odds ratio [OR], 0.91; 95% confidence interval [CI], 0.77-1.09; p = 0.31). Four trials reported the rate of nonfatal myocardial infarction (MI). Azithromycin did not have an effect on the rate of nonfatal MI versus placebo (OR, 0.95; 95% Cl, 0.80-1.13; p = 0.57). Five trials reported rates of hospitalization in which no significant difference was seen with azithromycin versus placebo (OR, 0.97; 95% Cl, 0.80-1.17; p = 0.76). Six trials were used to evaluate the composite cardiovascular endpoint. Again, no significant benefit was seen with azithromycin versus placebo (OR, 0.93; 95% Cl, 0.84-1.03; p = 0:218). Conclusion. Meta-analysis showed that azithromycin does not appear to reduce the frequency of recurrent cardiac events in patients with CAD. Results from ongoing trials may clarify the role of azithromycin in the secondary prevention of coronary events.

Keywords: Antibiotic, Antibiotic-Therapy, Atherosclerosis, Azithromycin, Cardiovascular, Chlamydia-Pneumoniae, Clinical-Trials, Cochrane, Coronary Disease, Disease, Embase, Endpoints, Events, Frequency, Heart-Disease, Hospitalization, Literature, Macrolides, Medline, Meta Analysis, Meta-Analysis, Methods, Model, Mortality, Myocardial Infarction, Myocardial-Infarction, Outcomes, Prevention, Randomized Controlled-Trials, Ratio, Science, Secondary Prevention, Seropositivity, Susceptibilities, Systematic, Web of Science

# Title: American Journal of Hematology

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Journal Country/Territory: United States

Language: English

Publisher: Wiley-Liss

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Subject Categories:

Hematology: Impact Factor

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Full Text: 1992\Ame J Hem41, 232.pdf

Abstract: Gallium, when bound to transferrin, has been previously shown to cause tumor cell cytotoxicity by preventing cellular uptake of transferrin bound iron in vitro. Patients treated with constant infusion gallium nitrate tor carcinoma show a rise in serum iron within 6 hr of the start of treatment. Serum iron returns to baseline by 24 hr post-infusion. Atomic analysis of iron and gallium content of Sephadex G-150 tractions of treatment sera indicate that about an equamolar amount of gallium and iron are associated with transferrin. These gallium and iron concentrations result in inhibition of transferrin mediated iron uptake in vitro, and in vivo allow for >90% saturation of transferrin with metal. All seven patients who completed two courses of gallium therapy exhibited hypochromic microcytic anemia (mean fall in hemoglobin 3.5 grams %). Evidence for red cell iron depletion was confirmed by an increase (mean 3.3-fold) in zinc protoporphyrin levels. Since transferrin receptor increases on gallium treated iron requiring cells in vitro, we assessed cell surface transferrin receptor on peripheral blood lymphocytes by measuring fluorescent transferrin receptor antibody binding. A population of highly transferrin receptor positive cells peaks at 48 hr into the infusion. DNA analysis as well as double staining indicate the majority of transferrin receptor positive cells are unstimulated B lymphocytes. These studies provide the first documentation that constant infusion gallium treatment results in significant interference with iron metabolism and evidence for tissue iron depletion in vivo. These changes may correlate with therapeutic effects of gallium such as tumor response.

Keywords: Gallium Nitrate, Iron Metabolism, Anemia, Transferrin Receptor Expression, Phase-II Evaluation, Continuous-Infusion, Cellular Proliferation, Bound Iron, Inhibition, Cells, Toxicity, Cancer, Metal

? Velazquez, I. and Alter, B.P. (2004), Androgens and liver tumors: Fanconi’s anemia and non-Fanconi’s conditions. *American Journal of Hematology*, **77** (3), 257-267.

Full Text: [2004\Ame J Hem77, 257.pdf](2004/Ame%20J%20Hem77,%20257.pdf)

Abstract: The association between anabolic androgenic steroids and liver tumors was first noted in patients with Fanconi’s anemia (FA). The hypotheses which led to this review were as follows: (1) androgen-treated individuals who do not have FA are also at risk of liver tumors; (2) parenteral as well as oral androgens may be responsible for liver tumors; (3) FA patients develop liver tumors after smaller and briefer androgen exposure than non-FA individuals; (4) the risk of hepatic neoplasms may depend on the specific androgen. Medline and Web of Science were searched for all cases of liver tumors associated with androgens. Information from individual cases was entered into a spreadsheet and descriptive statistical analyses were performed. Thirty-six FA cases and 97 non-FA cases with both nonhematologic disorders and acquired aplastic anemia (non-FA AA) were identified. The most common androgens were oxymetholone, methyltestosterone, and danazol. Hepatocellular carcinomas (HCC) were more often associated with oxymetholone and methyltestosterone, while adenomas were associated with danazol. Tumors were reported in six patients who received only parenteral and not oral androgens. FA patients were younger than non-FA patients when androgen use was initiated, and the FA patients developed tumors at younger ages. Non-AA patients were treated with androgens for longer periods of time, compared with FA and non-FA AA patients. All patients on anabolic androgenic steroids are at risk of liver tumors, regardless of underlying diagnosis. The magnitude of the risk cannot be determined from currently available ata, because the number of patients receiving androgens is unknown. Published 2004 Wiley-Liss, Inc.(dagger).

Keywords: Adenomas, Anabolic Steroids, Anabolic-Steroid-Therapy, Androgens, Aplastic-Anemia, Bone-Marrow-Transplantation, Cell Adenoma, Danazol Therapy, Diagnosis, FA, Hepatocellular Carcinomas, Hepatomas, Hereditary Angio-Edema, Induced Hepatocellular Adenoma, Liver Tumors, Long-Term Methyltestosterone, Multiple Hepatic Adenomas, Neoplasms, Peliosis Hepatis, Review, Risk, Science, Statistical, Web of Science

# Title: American Journal of Hospice and Palliative Medicine

Full Journal Title: [American Journal of Hospice and Palliative Medicine](http://ajh.sagepub.com/)

ISO Abbreviated Title:

JCR Abbreviated Title:

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Subject Categories:

: Impact Factor

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Full Text: [2004\Ame J Hos Pal Med21, 353.pdf](2004/Ame%20J%20Hos%20Pal%20Med21,%20353.pdf)

Abstract: With the growth and development of palliative care, interest in pastoral care, spirituality, and religion also seems to be growing. The aim of this article is to review the topic of pastoral care, spirituality, and religion appearing in the journals of palliative care, between January 1984 and January 2002.

Keywords: Care, Development, Growth, Journals, Palliative Care, Religion, Review

# Title: American Journal of Human Biology

Full Journal Title: [American Journal of Human Biology](http://www3.interscience.wiley.com/journal/37873/home)

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Issues/Year:

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Language:

Publisher:

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Full Text: [2003\Ame J Hum Bio15, 440.pdf](2003/Ame%20J%20Hum%20Bio15,%20440.pdf)

Abstract: This study examines trends in women’s participation in human biology as indicated by women’s membership in the Human Biology Council/Association, first authorship of articles in the Human Biology Council/Association journal, and the extent to which women have been the subjects of research published in the organization’s journal. Gender of members was determined from seven membership lists published in the organization’s journal from 1977 to 1998, and the gender of the first authors was determined for 1,616 articles published in Human Biology or the American Journal of Human Biology from 1975 to 2001. Each journal article was also coded as to the first author’s country and whether the subjects of the research were only females, only males, or both males and females. From the late 1970s to the late 1990s, the percent of women members of the Human Biology Council/Association increased from under 25% to over 40%. Women were the first authors of fewer than 20% of articles in the organization’s journal in the late 1970s; by the late 1990s over 30% of articles had a female first author. The clearest increase in female authorship through time is seen for articles with a first author from the U.S. Even when women were not well represented as human biologists, a substantial proportion of human biology research published in the organization’s journal dealt with females, and over the last 15 years there have been more research articles having only females as research subjects than articles having only males as research subjects. (C) 2003 Wiley-Liss, Inc.

Keywords: Authorship, Biology, Country, Female, First, Gender, Human, Journal, Journal Article, Participation, Research, Trends, Women

# Title: American Journal of Human Genetics

Full Journal Title: [American Journal of Human Genetics](http://weblinks1.epnet.com/authHjafDetail.asp?tb=1&_ua=bo+B%5F+db+bmhjnh+bt+ID++1WZ+DE7F&_ug=sid+7FB2CCF2%2D1778%2D4BEA%2D92DA%2D92C2C2F5A66F%40sessionmgr2+dbs+bmh+9F46&_us=hd+True+sm+ES+4DBA&_uso=st%5B0+%2DID++1WZ+tg%5B0+%2D+db%5B0+%2Dbmh+op%5B0+)

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Subject Categories:

Genetics & Heredity: Impact Factor 10.649 (2002)

? Cohen, M.M. (1995), Who are we - Where are we going - Anticipating the 21St-Century. *American Journal of Human Genetics*, **56** (1), 1-10.

Full Text: [1995\Ame J Hum Gen56, 1.pdf](1995/Ame%20J%20Hum%20Gen56,%201.pdf)

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Full Text: 2000\Ame J Hum Gen67, 104.pdf

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Full Text: Ame J Hum Gen67, 511.pdf

Keywords: Bibliometric, Bibliometric Study, Cancer, Research

? Lewis, C.M., Levinson, D.F., Wise, L.H., Delisi, L.E., Straub, R.E., Hovatta, I., Williams, N.M., Schwab, S.G., Pulver, A.E., Faraone, S.V., Brzustowicz, L.M., Kaufmann, C.A., Garver, D.L., Gurling, H.M.D., Lindholm, E., Coon, H., Moises, H.W., Byerley, W., Shaw, S.H., Mesen, A., Sherrington, R., O’Neill, F.A., Walsh, D., Kendler, K.S., Ekelund, J., Paunio, T., Lonnqvist, J., Peltonen, L., O’Donovan, M.C., Owen, M.J., Wildenauer, D.B., Maier, W., Nestadt, G., Blouin, J.L., Antonarakis, S.E., Mowry, B.J., Silverman, J.M., Crowe, R.R., Cloninger, C.R., Tsuang, M.T., Malaspina, D., Harkavy-Friedman, J.M., Svrakic, D.M., Bassett, A.S., Holcomb, J., Kalsi, G., McQuillin, A., Brynjolfson, J., Sigmundsson, T., Petursson, H., Jazin, E., Zoega, T. and Helgason, T. (2003), Genome scan meta-analysis of schizophrenia and bipolar disorder, part II: Schizophrenia. *American Journal of Human Genetics*, **73** (1), 34-48.

Full Text: [2003\Ame J Hum Gen73, 34.pdf](2003/Ame%20J%20Hum%20Gen73,%2034.pdf)

Abstract: Schizophrenia is a common disorder with high heritability and a 10-fold increase in risk to siblings of probands. Replication has been inconsistent for reports of significant genetic linkage. To assess evidence for linkage across studies, rank-based genome scan meta-analysis (GSMA) was applied to data from 20 schizophrenia genome scans. Each marker for each scan was assigned to 1 of 120 30-cM bins, with the bins ranked by linkage scores (1 = most significant) and the ranks averaged across studies (R-avg) and then weighted for sample size (rootN[affected cases]). A permutation test was used to compute the probability of observing, by chance, each bin’s average rank (P-AvgRnk) or of observing it for a bin with the same place (first, second, etc.) in the order of average ranks in each permutation (P-ord). The GSMA produced significant genomewide evidence for linkage on chromosome 2q (P-AvgRnk <.000417). Two aggregate criteria for linkage were also met ( clusters of nominally significant P values that did not occur in 1,000 replicates of the entire data set with no linkage present): 12 consecutive bins with both P-AvgRnk and P-ord <.05, including regions of chromosomes 5q, 3p, 11q, 6p, 1q, 22q, 8p, 20q, and 14p, and 19 consecutive bins with, additionally including regions of chromosomes 16q, 18q, 10p, 15q, 6q, and 17q. There is greater consistency of linkage results across studies than has been previously recognized. The results suggest that some or all of these regions contain loci that increase susceptibility to schizophrenia in diverse populations.

Keywords: Chromosome 8p, Families, Follow-up, Genetic-Linkage, Linkage Analysis, Meta-Analysis, Schizoaffective Disorder, Sibling Pairs, Susceptibility Locus, Vulnerability Locus, Wide Scan

Notes: highly cited

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Full Text: [2003\Ame J Hum Gen73, 49.pdf](2003/Ame%20J%20Hum%20Gen73,%2049.pdf)

Abstract: Genome scans of bipolar disorder (BPD) have not produced consistent evidence for linkage. The rank-based genome scan meta-analysis (GSMA) method was applied to 18 BPD genome scan data sets in an effort to identify regions with significant support for linkage in the combined data. The two primary analyses considered available linkage data for “very narrow” (i.e., BP-I and schizoaffective disorder - BP) and “narrow” (i.e., adding BP-II disorder) disease models, with the ranks weighted for sample size. A “broad” model (i.e., adding recurrent major depression) and unweighted analyses were also performed. No region achieved genomewide statistical significance by several simulation-based criteria. The most significant P values (<.01) were observed on chromosomes 9p22.3-21.1 (very narrow), 10q11.21-22.1 (very narrow), and 14q24.1-32.12 (narrow). Nominally significant P values were observed in adjacent bins on chromosomes 9p and 18p-q, across all three disease models on chromosomes 14q and 18p-q, and across two models on chromosome 8q. Relatively few BPD pedigrees have been studied under narrow disease models relative to the schizophrenia GSMA data set, which produced more significant results. There was no overlap of the highest-ranked regions for the two disorders. The present results for the very narrow model are promising but suggest that more and larger data sets are needed. Alternatively, linkage might be detected in certain populations or subsets of pedigrees. The narrow and broad data sets had considerable power, according to simulation studies, but did not produce more highly significant evidence for linkage. We note that meta-analysis can sometimes provide support for linkage but cannot disprove linkage in any candidate region.

Keywords: Chromosome 12Q23-Q24, Complex Traits, Controlled Family, Depression, DNA Markers, Genetic-Linkage, Manic-Depression, Meta-Analysis, Old-Order Amish, Potential Loci, Primary, Statistical, Susceptibility Locus, Wide Search

# Title: American Journal of Hygiene

Full Journal Title: American Journal of Hygiene

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? Lotka, A.J. (1923), Contribution to the analysis of malaria epidemiology. I. General part. *American Journal of Hygiene*, **3** (S), 1-37.

Full Text: [-1959\Ame J Hyg3, 1.pdf](-1959/Ame%20J%20Hyg3,%201.pdf)

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Full Text: [-1959\Ame J Hyg3, 38.pdf](-1959/Ame%20J%20Hyg3,%2038.pdf)

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Full Text: [-1959\Ame J Hyg3, 55.pdf](-1959/Ame%20J%20Hyg3,%2055.pdf)

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Full Text: [-1959\Ame J Hyg3, 113.pdf](-1959/Ame%20J%20Hyg3,%20113.pdf)

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Full Text: [-1959\Ame J Hyg7, 299.pdf](-1959/Ame%20J%20Hyg7,%20299.pdf)

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Full Text: [-1959\Ame J Hyg8, 875.pdf](-1959/Ame%20J%20Hyg8,%20875.pdf)

# Title: American Journal of Hypertension

Full Journal Title: [American Journal of Hypertension](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=4875&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=dd288086027019bdc298536dac7b1de1)

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Language: English

Publisher: Elsevier Science Inc

Publisher Address: 655 Avenue of the Americas, New York, NY 10010

Subject Categories:

Peripheral Vascular Disease: Impact Factor

Yang, C.Y. and Chiu, H.F. (1999), Calcium and magnesium in drinking water and the risk of death from hypertension. *American Journal of Hypertension*, **12** (9), 894-899.

Full Text: [A\Ame J Hyp12, 894.pdf](A/Ame%20J%20Hyp12,%20894.pdf)

Abstract: Many studies have demonstrated a negative association between blood pressure and calcium and magnesium levels. This report examines whether calcium and magnesium in drinking water are protective against hypertension. All eligible hypertension deaths (2336 cases) of Taiwan residents from 1990 through 1994 were compared with deaths from other causes (2336 controls), and the levels of calcium and magnesium in the drinking water of these residents were determined. Data on calcium and magnesium levels in drinking water throughout Taiwan have been obtained from the Taiwan Water Supply Corporation. The control group consisted of people who died from other causes and the controls were pair matched to the cases by sex, year of birth, and year of death. Magnesium levels in drinking water were inversely related to the risk of death from hypertension. The adjusted odds ratios (95% confidence interval) for the highest versus lowest quintiles of exposure was 0.63 (0.47 to 0.84). After adjustment for magnesium levels in drinking water, there was no difference between the groups with different levels of calcium. The results of the present study show that there is a significant protective effect of magnesium intake from drinking water on the risk of hypertension. This is an important finding for the Taiwan water industry and human health.

Keywords: Calcium, Magnesium, Hypertension, Mortality, Epidemiology, Blood-Pressure, United-States, Cardiovascular-Disease, Dietary Calcium, Potassium, Cancer, Mortality, Alcohol, Sodium, Men

? Ranpura, V., Pulipati, B., Chu, D., Zhu, X.L. and Wu, S.H. (2010), Increased risk of high-grade hypertension with Bevacizumab in cancer patients: A meta-analysis. *American Journal of Hypertension*, **23** (5), 460-468.

Full Text: [2010\Ame J Hyp23, 460.pdf](2010/Ame%20J%20Hyp23,%20460.pdf)

Abstract: BACKGROUND Hypertension is associated with the use of bevacizumab, an angiogenesis inhibitor widely used in cancer therapy. Currently, the risk of severe hypertension associated with bevacizumab is unclear. We performed a systematic review and meta-analysis of published randomized-controlled clinical trials (RCTs) to assess the risk of high-grade hypertension in cancer patients treated with bevacizumab. METHODS Databases from PUBMED, the Web of Science, and abstracts presented at the American Society of Clinical Oncology conferences until May 2009 were searched to identify relevant studies. Eligible studies included prospective RCTs in which bevacizumab was directly compared with controls in cancer patients receiving concurrent antineoplastic therapy. Summary incidence, relative risk (RR), and 95% confidence interval (CI) were calculated employing a fixed- or random-effects model based upon the heterogeneity of the included studies. RESULTS A total of 12,656 patients with a variety of tumors from 20 studies were included for the analysis. The incidence of all-grade hypertension in patients receiving bevacizumab was 23.6% (95% CI: 20.5-27.1) with 7.9% (95% CI: 6.1-10.2) being high-grade (grade 3 or 4). Patients treated with bevacizumab had a significantly increased risk of developing high-grade hypertension with an RR of 5.28(95% CI: 4.15-6.71, P < 0.001) in comparison with controls. Even though not statistically significant, there was a trend suggesting that bevacizumab may increase the risk of hypertensive crisis (grade 4) with an RR of 3.16(95% CI: 0.91-10.90). The increased risk of high-grade hypertension was observed in patients receiving bevacizumab at 2.5 mg/kg/week (RR = 4.78,95% CI: 3.59-6.36) as well as 5 mg/kg/week (RR = 5.39,95% CI: 3.68-7.90). The risk of high-grade hypertension may vary with tumor types, with RRs ranging from 2.49 (95% CI: 0.94-6.59) in patients with mesothelioma to 14.80(95% CI: 0.92-238.51) in patients with breast cancer. CONCLUSION Bevacizumab may significantly increase the risk of high-grade hypertension in cancer patients. Close monitoring and adequate management are highly recommended to decrease cardiovascular complications.

Keywords: 1st-Line Therapy, Analysis, Angiogenesis, Angiogenesis Inhibitor, Bevacizumab, Blood Pressure, Breast Cancer, Breast-Cancer, Cancer, Cardiovascular, Clinical Trials, Crisis, Databases, Endothelial Growth-Factor, Hypertension, Lung-Cancer, Management, Meta-Analysis, Metastatic Colorectal-Cancer, Model, Monitoring, Oncology, Phase-III Trial, Randomized-Trial, Relative Risk, Renal-Cell Carcinoma, Review, Risk, Science, Systematic, Systematic Review, Therapy, Trend, Tumor-Growth, Vascular Endothelial Growth Factor, Web of Science

# Title: American Journal of Industrial Medicine

Full Journal Title: [American Journal of Industrial Medicine](http://www3.interscience.wiley.com/cgi-bin/jtoc?ID=34471)

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ISSN: 0271-3586

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Language: English

Publisher: Wiley-Liss

Publisher Address: Div John Wiley & Sons Inc, 605 Third Ave, New York, NY 10158-0012

Subject Categories:

Public, Environmental & Occupational Health: Impact Factor, 1.368, 40/85

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Full Text: [1983\Ame J Ind Med4, 565.pdf](1983/Ame%20J%20Ind%20Med4,%20565.pdf)

Abstract: A case-control comparison of lung cancer deaths versus deaths from all other cancers occurring in Alameda County, California, between 1958 and 1962 was conducted to investigate possible associations between lung cancer and occupation. Age-adjusted, sex-specific analyses indicated that a history of work in certain industries and occupations was associated with an increased risk of lung cancer. Among males, a significant positive association was found for glass, metal, furniture, professional and photographic equipment, rubber, leather and plastic manufacturing; water and air transportation; auto repair services; and construction. Specific occupations associated with a significant positive risk for males were: electricians, aircraft mechanics, painters, plasterers, machine operators, construction workers, bus and truck drivers, and guards and nightwatchmen. Among females, beauticians had a significantly high risk associated with lung cancer. These results were consistent with other studies of lung cancer related to occupation.

Notes: highly cited

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Full Text: [1990\Ame J Ind Med17, 189.pdf](1990/Ame%20J%20Ind%20Med17,%20189.pdf)

Abstract: The present review is motivated by the fact that 100 years have passed since the first cancer case in a chromium worker was reported in Scotland. Old and recent case reports and epidemiological studies among chromate workers are reviewed to elucidate the importance of valency states and water solubility of chromium compounds for carcinogenic potency. It is concluded that all chromium[VI] compounds should be considered carcinogenic among exposed populations, and that no evidence has been presented indicating that human exposure to chromium[III] is associated with increased cancer risk. Strong evidence has been presented that zinc chromate is a potent carcinogen and suggests that calcium chromate may be a potent carcinogen. Evidence also suggests that water-soluble chromates in general may be more potent carcinogens than those with low solubility. Primary and secondary prevention of chromate-related cancer and the success in preventive measures are briefly discussed, and recommendations for future research are made.

Keywords: Calcium Chromate, Carcinogenic Potency, Chromic Compounds, Chromium Trioxide, Lead Chromate, Lung Cancer, Prevention, Occupational Disease, Valency State, Zinc Chromate

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Full Text: [1992\Ame J Ind Med22, 33.pdf](1992/Ame%20J%20Ind%20Med22,%2033.pdf)

Abstract: Disease clusters have been an important source of epidemiologic and medical information in the history of occupational medicine. Many accepted disease-exposure linkages were first observed and investigated as disease clusters in the workplace setting. Recent interest in disease cluster methodology has focused on traditional environmental settings. There has been very little work on a similar methodology for the investigation of disease clusters in the workplace, despite the many advantages of workplace cluster investigations for recognizing new etiologic associations. In this paper, a protocol is proposed and discussed which can be implemented in both acute and chronic disease cluster outbreaks in the workplace, where no obvious previously recognized cause is identified. A standardized approach to occupational disease cluster investigation will lead to increased efficiency, decreased social-political tensions, and a greater yield of scientific information.

Keywords: Occupational Health, Occupational Epidemiology, Disease Clusters, Protocol, Disease Exposure Linkages, Large-Bowel Cancer, Workers, Mortality, Dimethylaminopropionitrile, Manufacture, Survival, Liver, Risk

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Full Text: [1992\Ame J Ind Med22, 363.pdf](1992/Ame%20J%20Ind%20Med22,%20363.pdf)

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Full Text: [1992\Ame J Ind Med22, 793.pdf](1992/Ame%20J%20Ind%20Med22,%20793.pdf)

Abstract: In California, 370 carcinogens and 112 reproductive/developmental toxicants have been identified as a result of the State’s Safe Drinking Water and Toxic Enforcement Act of 1986. They include pesticides, solvents, metals, industrial intermediates, environmental mixtures, and reactive agents. Occupational, environmental, and consumer product exposures that involve these agents are regulated under the Act. At levels of concern, businesses must provide warnings for and limit discharges of those chemicals. The lists of chemicals were compiled following systematic review of published data, including technical reports from the U.S. Public Health Service-National Toxicology Program (NTP), and evaluation of recommendations from authoritative bodies such as the International Agency for Research on Cancer (IARC) and the U.S. Environmental Protection Agency (USEPA). Given the large number of chemicals that are carcinogens or reproductive/developmental toxicants, regulatory concerns should focus on those that have high potential for human exposure, e.g., widely distributed or easily absorbed solvents, metals, environmental mixtures, or reactive agents. In this paper, we present a list of 33 potential priority carcinogens and reproductive/developmental toxicants, including alcoholic beverages, asbestos, benzene, chlorinated solvents, formaldehyde, glycol ethers, lead, tobacco smoke, and toluene.

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Full Text: [1994\Ame J Ind Med25, 489.pdf](1994/Ame%20J%20Ind%20Med25,%20489.pdf)

Abstract: Starting from a cross-sectional survey in 1973, the mortality of two cohorts of Sardinian metal miners was followed through December 31, 1988. In mine, A., the quartz concentration in respirable dust ranged between 0.2% and 2.0% and the exposure to radon daughters averaged 0.13 working level (WL), with the highest estimated cumulative exposure around 80-120 WLM. In mine, B., the silica content was much higher (6.529%), but exposure to radon daughters was significantly lower than in mine A. More than 98% of the overall work force in 1973 (1, 741 miners) entered the cohort, providing 25, 842.5 person-years. Smoking, occupational history, chest radiographs, and lung function tests were available for the cohort members at admission. Mortality for all causes was slightly lower than expected. A significant excess for nonmalignant chronic respiratory diseases was noticed in both mines. Twenty-four subjects died of lung cancer, 17 from mine A (SMR: 128; 95% confidence interval [CI]: 75-205) and 7 from mine B (SMR: 85; 95% CI: 34-175). The SMR for lung cancer was highest among the underground workers from mine A (SMR: 148; 95% CI: 74-265), with a significant upward trend by duration of employment in underground jobs. Mine B underground miners showed lung cancer SMRs close to 100 without a significant trend by duration of employment. Among underground miners with spirometric airways obstruction in 1973, those from mine A showed the highest risk (SMR: 316; 95% CI: 116-687). The relationship did not change after adjusting for age and smoking. Based on the present findings, crystalline silica per se does not appear to affect lung cancer mortality. A slight association between lung cancer mortality and exposure to radon daughters, though within relatively low levels, may be considered for underground miners from mine A. Impaired pulmonary function may be an independent predictor of lung cancer and an important risk factor enhancing the residence time of inhaled carcinogens, i.e., alpha particles or PAHs, by impairing their bronchial and alveolar clearance. (C) 1994 Wiley-Liss, Inc.

Keywords: Silica Exposure, Silicosis, Radon, Airways Obstruction, Lung Cancer, Metal Miners, Vermont Granite Workers, African Gold Miners, Coal-Miners, Pulmonary-Disease, Ceramic Workers, Dust Exposure, Case-Referent, Iron Miners, Risk Factor, Cohort

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Full Text: [1994\Ame J Ind Med26, 221.pdf](1994/Ame%20J%20Ind%20Med26,%20221.pdf)

Abstract: A chromium electroplating worker, suffering from epistaxis during work, was found to have nasal septum perforation. To determine the etiology and prevalence of nasal septum lesions, we conducted a survey of seven chromium electroplating factories and examined 79 workers. Forty workers from three aluminum electroplating factories were also enrolled as the reference group. Subjects were thoroughly examined by an otolaryngologist and each of them provided a blood and urine sample. A questionnaire interview regarding symptoms of the upper respiratory tract, past medical history, life style, and work history was also conducted. Air chromium concentrations were measured by taking area samples for 4-6 hours. Based on field observation and chromium measurements, we divided chromium electroplating into three different exposure zones: workers directly dealing with electroplating tanks (n = 31), other process workers (n = 29), and office workers and drivers (n = 19). Among the 79 chromium electroplating workers, there were 16 cases of nasal septum perforation, and 42 with either scar formation or ulceration; 10 chromium electroplating workers developed skin ulcers after performing chrome plating. No workers from aluminum electroplating factories had any nasal septum or skin abnormalities. There was a consistent trend between the degree of chromium exposure and the signs and symptoms related to the nose, throat, and skin. Immediate improvement of occupational hygiene is warranted. (C) 1994 Wiley-Liss, Inc.

Keywords: Aluminum Electroplating, Vdrl, Urine Chromium, Area Air Chromium, Ventilation Control, Occupational Hygiene, Nasal Perforation, Urinary Chromium, Welders

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Full Text: [1996\Ame J Ind Med29, 3.pdf](1996/Ame%20J%20Ind%20Med29,%203.pdf)

Abstract: Peak expiratory flow (PEF) and workplace exposure to endotoxin, phenolic resin, and formaldehyde were measured to investigate asthma symptoms and medication use among employees in a fiberglass wool manufacturing plant. Self-recorded PEF was obtained form 37 workers, for a total of 181 days off work and 187 days at work with concurrent personal exposure monitoring. Pre-and post-shift spirometry were obtained on at least 2 days. The 8 hr time-weighted average personal exposure ranges were endotoxin, 0.4-759 ng/m3; phenolic resin, 5.7-327 μg/m3; and formaldehyde, 1.2-265 μgm3.Amplitude percent mean peak flow was associated with years since starting regular work in the highest endotoxin exposure area, although current assignment in that area was associated with reduced amplitude-evidence for a healthy worker effect. Exposure-response was analyzed by regression of lung function change on exposure using generalized estimating equations with robust variance estimates. Endotoxin exposure above 4 ng/m3 (8 hr time-weighted average) was associated with a decline in lung function across the work shift, and with drops in lung function 16-20 hr after exposure. Phenolic resin exposure was not consistently associated with decrements, and formaldehyde was not associated with decrements in lung function. (C) 1996 Wiley-Liss, Inc.

Keywords: Endotoxin, Peak Expiratory Flow, Occupational Asthma, Formaldehyde, Phenol-Formaldehyde Resin, Fiberglass Manufacturing, Occupational Asthma, Respiratory-Function, Organic Dust, Cotton Dust, Workers, Formaldehyde, Chromatography, Inhalation, Healthy, Resin

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Full Text: [1996\Ame J Ind Med30, 373.pdf](1996/Ame%20J%20Ind%20Med30,%20373.pdf)

Abstract: The cancer incidence in a historical cohort of 10, 059 metal workers employed during the period 1964-1984 was investigated. Standardized incidence ratios (SIR) were calculated based on registry extracts from the Danish Cancer registry. Lifetime exposure data (occupational and other) were obtained by a postal questionnaire in living cohort members and interviews by proxy for deceased and emigrated subjects. The incidence of lung cancer was increased among workers ever “employed as welders” (SIR = 1.38, 95% C.I. 1.03-1.81). There was a significant excess risk of lung cancer among “mild steel (MS) only welders” (SIR = 1.61, 95% C.I. 1.07-2.33) and “nonwelders” (SIR = 1.69, 95% C.I. 1.23-2.26) (indicating carcinogenic exposures other than welding), a borderline significant lung cancer excess among “MS ever welder” (SIR = 1.32. 95% C.I. 0.97-1.76), and a nonsignificant excess risk of lung cancer among “stainless steel (SS) only welders” (SIR = 2.38, 95% C.I. 0.77-5.55). In spite of signs of inconsistency in the risk estimation by duration and latency, we find the results support the conclusions of other studies: employment as a welder is associated with an increased lung cancer risk. (C) 1996 Wiley-Liss, Inc.

Keywords: Welding, Stainless Steel, Mild Steel, Grinding, Lung Cancer, Testis Cancer, Metal Work, Lung-Cancer, Mortality, Exposure, Cohort

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Full Text: [A\Ame J Ind Med34, 183.pdf](A/Ame%20J%20Ind%20Med34,%20183.pdf)

Abstract: In an investigation of health complaints among employees of a water-damaged office building, the environment showed evidence of fungal contamination with the isolation of Stachybotrys chartarum in one of five bulk samples tested for fungal growth. In response, a public health official recommended that employees be relocated from the building. Employees were subsequently moved to a different environment. A focused environmental investigation of microbial growth within the building followed revealing moderate to high levels of fungi (*Penicillium*, *Aspergillus* versicolor) and bacteria in bulk and surface samples. S. chartarum M ns identified in one of 19 (5%) environmental samples using Czapek agar A health survey of building occupants revealed a high prevalence of multiple symptoms, with a predominance of neurobehavioral and upper respiratory tract complaints. The majority of symptoms were significantly less prevalent after relocation from the water-damaged environment. The initial hypothesis that exposure to toxigenic fungi was responsible for the high prevalence of reported symptoms is difficult to investigate and confirm given the current limits of epidemiological knowledge regarding exposure to these organisms and building-related illness. Future interventions where mycotoxin exposure is suspected should emphasize the importance of risk assessment and risk communication. (C) 1998 Wiley-Liss, Inc.

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Full Text: [1999\Ame J Ind Med36, 18.pdf](1999/Ame%20J%20Ind%20Med36,%2018.pdf)

Abstract: Epidemiological research, on occupational hazards and reproductive health is an expanding and strongly developing area. This article focuses on some recent areas of occupational reproductive epidemiology that are or seem to be important for the future, Interest in the research on fertility has increased during the past decade, and time to pregnancy has proved to be a useful measure of fertility. The research on menstrual function or early fetal loss is still limited, and further research is desirable. It is important to chart the advantages and disadvantages of various methods for measuring these outcomes. Recently developed methods of exposure assessment provide new possibilities to improve the validity of exposure data. Biological exposure markers can also provide useful dosimeters for reproductive studies. Research on the reproductive effects of job stress and individual susceptibility to reproductive toxicants is also gaining in importance. Am. J. Ind. Med, 36: 18-24, 1999. (C) 1999 Wiley-Liss, Inc.

Keywords: Fertility, Menstrual Disorders, Early Fetal Loss, Occupational Exposure Assessment, Job Stress, Susceptibility, Female Semiconductor Workers, Low-Birth-Weight, Spontaneous-Abortion, Menstrual-Cycle, Recall Bias, Preterm Delivery, Organic-Solvents, Shift Work, Job Stress, Pregnancy

Notes: highly cited

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Full Text: [2000\Ame J Ind Med38, 115.pdf](2000/Ame%20J%20Ind%20Med38,%20115.pdf)

Abstract: Background An elevated risk of lung cancer among workers in chromate production facilities has previously beer? reported. This excess risk is believed to be the result of exposure to hexavalent chromium, There have been mixed reports about whether trivalent chromium exposure is also associated with an excess lung cancer risk. Previous studies of measured hexavalent chromium exposure and lung cancer risk have not examined cigarette smoking as a risk factor: Methods ii cohort of 2,357 workers first employed between 1950 and 1974 at a chromate production plant was identified. Vital status of the workers was followed until December 31, 1992. Work histories of cohort members were compiled from the beginning of employment through 1985, the year the plant closed. Annual average exposure estimates, based on historical exposure measurements, were made for each job title in the plant for the years 1950-1985. These exposure estimates were used to calculate the cumulative hexavalent chromium exposure of each member of the study population. Following closure of the plant, settled dust samples were collected and analyzed for hexavalent and trivalent chromium. The trivalent/hexavalent concentration ratios in each plant area were combined with historic air-sampling data to estimate cumulative trivalent chromium exposure for each individual in the study? cohort. Smoking status (yes/no) as of the beginning of employment and clinical signs of potential chromium irritation were identified from company records. Results Cumulative hexavalent chromium exposure showed a strong dose-response relationship for lung cancel: Clinical signs of irritation, cumulative trivalent chromium exposure, and duration of work were not found to be associated with a risk of lung cancer when included in a proportional hazards model with cumulative hexavalent chromium exposure and smoking. Age-specific data on cumulative hexavalent chromium exposure, observed and expected numbers of lung cancer cases, and person-years of observation are provided Conclusion Cumulative hexavalent chromium exposure was associated with an increased lung cancer risk; cumulative trivalent chromium exposure was not. The excess risk of lung cancer associated with cumulative hexavalent chromium exposure was not confounded by smoking status. The current study offers the best quantitative evidence to date of the relationship between hexavalent chromium exposure and lung cancel: Published 2000 Wiley-Liss, Inc.dagger.

Keywords: Cancer, Chromate, Exposure Response, Hexavalent Chromium, Industrial Carcinogen, Lung Cancer, Model, Smoking, Trivalent Chromium

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Full Text: [2004\Ame J Ind Med45, 522.pdf](2004/Ame%20J%20Ind%20Med45,%20522.pdf)

Abstract: Background Trench collapses ranked as the seventh leading cause of the possible twenty-nine causes of OSHA-inspected fatal construction events during the period 1991-2001. This study aims to examine why these fatalities occurred. Methods Forty-four case files from OSHA inspections of fatal trench collapses were reviewed. Results Improper protection of the excavation site where work was taking place was the leading fatality cause. Several organizational or physical conditions were present at many fatal sites; the most frequent was that no training had been provided for trenching. Conclusions Presence of a competent, diligent person at the site would have prohibited most fatalities. The top cited violation was lack of protection, that is, benching, shoring, sloping, trench boxes, etc. (29 CFR 1926.652 (a) (1)). (C) 2004 Wiley-Liss, Inc.

Keywords: 29 CFR 1926, Construction Fatalities, OSHA Violation, Trench Collapse

? Osborne, A., Blake, C., Fullen, B.M., Meredith, D., Phelan, J., McNamara, J. and Cunningham, C. (2012), Prevalence of musculoskeletal disorders among farmers: A systematic review. *American Journal of Industrial Medicine*, **55** (2), 143-158.

Full Text: [2012\Ame J Ind Med55, 143.pdf](2012/Ame%20J%20Ind%20Med55,%20143.pdf)

Abstract: Objective To determine the prevalence of musculoskeletal disorders (MSDs) among farmers and to establish the most common regional MSDs reported. Methods Comprehensive electronic searches of Pubmed, Web of Science, CINAHL, SCOPUS, EMBASE, Agris Database, and Cochrane Library were carried out using keywords for MSDs and farmers. Pooled estimates of prevalence with 95% confidence intervals were calculated for overall MSD prevalence and the most common regional MSDs reported. Results Twenty-four studies fulfilled the inclusion criteria and were incorporated into this review. From these studies, life-time prevalence of any form of MSD among farmers was 90.6% while 1-year MSD prevalence was 76.9% (95% CI 69.8-82.7). The majority of studies focused on spinal MSDs with low back pain (LBP) the most frequently investigated. Life-time LBP prevalence was 75% (95% CI 67-81.5) while 1-year LBP prevalence was 47.8% (95% CI 40.2-55.5). The next most common regional MSDs reported were upper (range 3.6-71.4%) and lower extremities (range 10.4-41%). Conclusions The systematic review identified the prevalence of MSDs by body region in farmers and established that LBP was the most common MSD, followed by upper and then lower extremity MSDs. Reported trends suggest that the prevalence of MSDs in farmers is greater than in non-farmer populations. Case-definition uniformity among MSD researchers is warranted. More studies are needed regarding upper and lower extremity MSDs, gender, workplace, and task context of MSDs. Am. J. Ind. Med. 55: 143-158, 2012. (C) 2011 Wiley Periodicals, Inc.

Keywords: Cochrane, Confidence Intervals, Dairy Farmers, Database, Embase, Family Health, Farmers, Gender, Hip, Irish Farmers, Life-Time, Lifetime, Low, Low-Back-Pain, Methods, Musculoskeletal Disorders, Osteoarthritis, Pain, Population, Prevalence, Researchers, Review, Risk-Factors, Science, Scopus, Symptoms, Systematic, Systematic Review, Trends, Web of Science, Web-of-Science, Work, Workplace

# Title: American Journal of Kidney Diseases

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ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zhu, X.L., Wu, S.H., Dahut, W.L. and Parikh, C.R. (2007), Risks of proteinuria and hypertension with bevacizumab, an antibody against vascular endothelial growth factor: Systematic review and meta-analysis. *American Journal of Kidney Diseases*, **49** (2), 186-193.

Full Text: [2007\Ame J Kid Dis49, 186.pdf](2007/Ame%20J%20Kid%20Dis49,%20186.pdf)

Abstract: Background: Angiogenesis inhibitors have emerged as an effective targeted therapy in the treatment of patients with many cancers. One of the most widely used angiogenesis inhibitors is bevacizumab, a neutralizing antibody against vascular endothelial growth factor. The overall risk of proteinuria and hypertension in patients with cancer on bevacizumab therapy is unclear. We performed a systematic review and meta-analysis of published clinical trials of bevacizumab to quantify the risk of proteinuria and hypertension. Methods: The databases MEDLINE (OVID, 1966 to June 2006) and Web of Science and abstracts presented at the American Society of Clinical Oncology annual meetings from 2004 through 2006 were searched to identify relevant studies. Eligible studies were randomized controlled trials of patients with cancer treated with bevacizumab that described the incidence of proteinuria and hypertension. Relative risk (RR) was calculated by using the fixed-effects model. Results: A total of 1,850 patients were included in the 7 trials identified from the literature. Bevacizumab was associated with a significant increased risk of proteinuria (RR, 1.4 with low-dose bevacizumab; 95% confidence interval [Cl], 1.1 to 1.7; FIR, 2.2 with high dose; 95% Cl, 1.6 to 2.9). Hypertension also was increased significantly among patients receiving bevacizumab (FIR, 3.0 for low dose; 95% Cl, 2.2 to 4.2; FIR, 7.5 for high dose; 95% Cl, 4.2 to 13.4). Conclusion: There was a significant dose-dependent increase in risk of proteinuria and hypertension in patients with cancer who received bevacizumab.

Keywords: Angiogenesis, Anti-Vegf Antibody, Bevacizumab, Cancer, Clinical Trials, Combination, Databases, Fluorouracil, Hypertension, Leucovorin, Literature, Medline, Meta-Analysis, Metastatic Colorectal-Cancer, Methods, Model, Oncology, Phase-Ii Trial, Preeclampsia, Proteinuria, Randomized Controlled Trials, Randomized-Trial, Receptor-1, Review, Risk, Science, Systematic, Systematic Review, Therapy, Treatment, Vascular Enclothelial Growth Factor (VEGF), Vascular Endothelial Growth Factor, Web of Science

? Mcgee, R.G., Neuen, B.L., Mitchell, R.L., Craig, J.C. and Webster, A.C. (2011), Diagnostic test studies in nephrology: Quantity, quality, and scope. *American Journal of Kidney Diseases*, **58** (6), 921-927.

Full Text: [2011\Ame J Kid Dis58, 921.pdf](2011/Ame%20J%20Kid%20Dis58,%20921.pdf)

Abstract: Background: Diagnostic errors represent an important cause of preventable harm in health care that may be reduced through evidence-based choice, use, and interpretation of diagnostic tests. We hypothesized that diagnostic errors are reduced through evidence-based choice, use, and interpretation of diagnostic tests. Study Design: Retrospective cohort study. Setting & Population: Diagnostic test studies. Selection Criteria for Studies: Publications from 1966-2008 retrieved from MEDLINE. Intervention: The Quality of Diagnostic Accuracy Studies (QUADAS) tool. Outcomes: Number and coverage of diagnostic studies in nephrology and methodological quality of the test accuracy subset. Results: Fewer diagnostic studies were published in nephrology than other areas of internal medicine, although the proportion of total citations that were diagnostic studies (4.9% +/- 2.8% [SD]) was not statistically different from other specialties (P = 0.2). Within nephrology, some topic areas (eg, urinary tract infections) were over-represented, whereas others (eg, acute kidney injury) had relatively few diagnostic studies (range, 2.7%-12.5%). Examining the randomly selected subset of studies that were diagnostic test accuracy studies (120) showed variable quality. Ninety-seven percent (116 of 120) of studies adequately described index test procedure, but only 27% (32 of 120) adequately blinded investigators to results of index tests, and 36% (43 of 120), to results of reference tests. The quality of nephrology diagnostic test accuracy studies has not improved substantially during the past 30 years. Limitations: Comparing nephrology with other specialties, some potential inequalities of scale could not be addressed, which may influence research output results across specialties. Conclusions: Diagnostic research in nephrology is published less frequently than most other medical specialties. The quality of diagnostic test accuracy studies that are published is variable and leaves room for improvement. Am J Kidney Dis. 58(6): 921-927. (C) 2011 by the National Kidney Foundation, Inc. Published by Elsevier Inc. All rights reserved.

Keywords: Accuracy, Acute, Bibliometrics, Cancer, Care, Citations, Cohort Study, Coverage, Diagnostic Test, Diagnostic Tests, Errors, Health Care, Injury, Interpretation, Intervention, Kidney, Medical, Medicine, Medline, Nephrology, Outcomes, Publications, Quality, Quantity, Research, Research Output, Selection, Test Accuracy Studies, Tract, Urinary Tract Infections

# Title: American Journal of Managed Care

Full Journal Title: American Journal of Managed Care

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Oake, N., Jennings, A., van Walraven, C. and Forster, A.J. (2009), Interactive voice response systems for improving delivery of ambulatory care. *American Journal of Managed Care*, **15** (6), 383-391.

Full Text: [2009\Ame J Man Car15, 383.pdf](2009/Ame%20J%20Man%20Car15,%20383.pdf)

Abstract: Objective: To comprehensively describe the populations, interventions, and outcomes of interactive voice response system (IVRS) clinical trials. Methods: We identified studies using MEDLINE (1950-2008) and EMBASE (1980-2008). We also identified studies using hand searches of the Science Citation Index and the reference lists of included articles. Included were randomized and controlled clinical trials that examined the effect of an IVRS intervention on clinical end points, measures of disease control, process adherence, or quality-of-life measures. Continuous and dichotomous outcomes were meta-analyzed using mean difference and median effects methodology, respectively. Results: Forty studies (n = 106,959 patients) met inclusion criteria. of these studies, 25 used an IVRS intervention aimed at encouraging adherence with recommended tests, treatments, or behaviors; the remaining 15 used an IVRS for chronic disease management. Three studies reported clinical end points, which could not be statistically pooled. In 6 studies that reported objective clinical measures of disease control (glycosylated hemoglobin, total cholesterol, and serum glucose), the IVRS was associated with nonsignificant improvements. In 14 studies that measured objective process adherence outcomes, the median effect was 7.9% (25th-75th percentile: 2.8%, 19.5%). For the 16 studies that assessed patient-reported measures of disease control and the 11 studies that assessed patient-reported process adherence outcomes, approximately one-third of the outcomes significantly favored the IVRS group. Conclusion: IVRS interventions, which enable patients to interact with computer databases via telephone, have shown a significant benefit in adherence to various processes of care. Future IVRS studies should include clinically relevant outcomes. (Am J Manag Care. 2009; 15(6): 383-391).

Keywords: Automated Calls, Cholesterol Reduction, Generated Telephone Messages, Heart-Failure, Information-Technology, Management, Nurse Follow-up, Physical-Activity, Randomized Controlled-Trial, Smoking-Cessation, Telecommunications System

? Sobieraj, D.M., Coleman, S.M. and Coleman, C.I. (2011), US prevalence of upper gastrointestinal symptoms: A systematic literature review. *American Journal of Managed Care*, **17** (11), E449-EU78.

Full Text: [2011\Ame J Man Car17, E449.pdf](2011/Ame%20J%20Man%20Car17,%20E449.pdf)

Abstract: Objectives: To quantify the prevalence of dyspeptic and gastroesophageal symptoms and peptic ulcer disease (PUD) in the United States and to identify factors affecting their prevalence. Study Design: Systematic search of MEDLINE and Web of Science through November 2010. Methods: We identified studies of US patients and evaluated a general (not disease-specific) adult sample that reported the prevalence of 1 or more upper gastrointestinal (GI) outcomes of interest, including dyspeptic symptoms, gastroesophageal symptoms, dyspeptic and/or gastroesophageal symptoms, or PUD. Proportions of individuals in each study reporting each symptom were pooled to derive separate prevalence estimates. Qualitative synthesis of data depicting multivariate relationships between covariates and upper GI outcomes was undertaken. Results: A total of 36 citations representing 24 studies were included: 9 studies reporting dyspeptic symptoms (n = 14,1811, 14 reporting gastroesophageal symptoms (n = 58,7011, 5 reporting dyspeptic and/or gastroesophageal symptoms (n = 103,175), and 7 reporting PUD prevalence (n = 269,299). The pooled prevalences of dyspeptic, gastroesophageal, and dyspeptic and/or gastroesophageal symptoms were 16.3% (95% confidence interval [CI] 9.1%-25.1%), 24.2% (95% Cl 18.2%-30.5%), and 35.2% (95% Cl 14.9%-58.9%). The pooled prevalence for studies asking for shorter-term PUD recall was 3.3% (95% Cl 2.2%-4.6%), with lifetime PUD prevalence estimated at 13.8%(95% Cl 10.7%-17.0%). The influence of covariates evaluated as part of multivariate analyses was often inconsistent. Conclusions: It appears that upper GI symptoms and disorders are common in US inhabitants. We identified patient- and study-level factors that should be considered when assessing upper GI symptom prevalence and conducting future research. (Am J Manag Care. 2071;17(11):e449-e458).

Keywords: Adult, Adult-Population, African-Americans, Care, Citations, Disease, Extraesophageal Reflux, Gastroesophageal-Reflux Disease, Gastrointestinal, Interest, Irritable-Bowel-Syndrome, Lifetime, Literature, Literature Review, Medline, Methods, Outcomes, Patients, Peptic-Ulcer Disease, Prevalence, Quality-of-Life, Research, Review, Risk-Factors, Science, Symptoms, Synthesis, Systematic, Uninvestigated Dyspepsia, United States, United-States, US, Web of Science

# Title: American Journal of Mathematics

Full Journal Title: [American Journal of Mathematics](http://uk.jstor.org/journals/00029327.html)

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ISSN: 0002-9327

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Subject Categories:

: Impact Factor

Newcomb, S. (1881), Note on the frequency of use of the different digits in natural numbers. *American Journal of Mathematics*, **4** (1), 39-40.

Full Text: [-1959\Ame J Mat4, 39.pdf](-1959/Ame%20J%20Mat4,%2039.pdf)

? Eisenhart, L.P. (1903), Isothermal-canjugate systems of lines on surfaces. *American Journal of Mathematics*, **25**, 213-248.

Full Text: [-1959\Ame J Mat25, 213.pdf](-1959/Ame%20J%20Mat25,%20213.pdf)

Keywords: Surfaces

# Title: American Journal of Medical Genetics Part B-Neuropsychiatric Genetics

Full Journal Title: American Journal of Medical Genetics Part B-Neuropsychiatric Genetics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Zwijnenburg, P.J.G., Meijers-Heijboer, H. and Boomsma, D.I. (2010), Identical but not the same: The value of discordant monozygotic twins in genetic research. *American Journal of Medical Genetics Part B-Neuropsychiatric Genetics*, **153B** (6), 1134-1149.

Full Text: [2010\Ame J Med Gen Par B-Neu Gen153B, 1134.pdf](2010/Ame%20J%20Med%20Gen%20Par%20B-Neu%20Gen153B,%201134.pdf)

Abstract: Monozygotic (MZ) twins show remarkable resemblance in many aspects of behavior, health, and disease. Until recently, MZ twins were usually called “genetically identical”; however, evidence for genetic and epigenetic differences within rare MZ twin pairs has accumulated. Here, we summarize the literature on MZ twins discordant for Mendelian inherited disorders and chromosomal abnormalities. A systematic literature search for English articles on discordant MZ twin pairs was performed in Web of Science and PubMed. A total number of 2,016 publications were retrieved and reviewed and 439 reports were retained. Discordant MZ twin pairs are informative in respect to variability of phenotypic expression, pathogenetic mechanisms, epigenetics, and post-zygotic mutagenesis and may serve as a model for research on genetic defects. The analysis of single discordant MZ twin pairs may represent an elegant approach to identify genes in inherited disorders. (C) 2010 Wiley-Liss, Inc.

Keywords: Analysis, Chromosome Disorders, Discordant, Disease, Duanes Retraction Syndrome, Duchenne Muscular-Dystrophy, Epigenetics, Genetic, Genetic Diseases, Hereditary Optic Neuropathy, Inborn, Literature, Mccune-Albright Syndrome, Model, Monozygotic, Of-the-Literature, Publications, Pubmed, Research, Russell-Silver Syndrome, Science, Systematic, Systemic-Lupus-Erythematosus, Twin Studies, Twins, Ullrich-Turner-Syndrome, Variability, Web of Science, Wiedemann-Beckwith Syndrome, X-Chromosome Inactivation

# Title: American Journal of the Medical Sciences

Full Journal Title: American Journal of the Medical Sciences

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Blackfan, K.D. (1917), Lead poisoning in children with especial reference to lead as a cause of convulsions. *American Journal of the Medical Sciences*, **153** (6), 877-887.

Full Text: [-1959\Ame J Med Sci153, 877.pdf](-1959/Ame%20J%20Med%20Sci153,%20877.pdf)

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Full Text: [1960-80\Ame J Med Sci252, 391.pdf](1960-80/Ame%20J%20Med%20Sci252,%20391.pdf)

? Falagas, M.E. and Bliziotis, I.A. (2007), Albendazole for the treatment of human echinococcosis: A review of comparative clinical trials. *American Journal of the Medical Sciences*, **334** (3), 171-179.

Full Text: 2007\Ame J Med Sci334, 171.pdf

Abstract: Background: Albendazole has been used in various ways in the treatment of cystic echinococcosis (CE). Methods: We reviewed the available evidence regarding the role of albendazole for the treatment of patients with CE. The available comparative clinical trials (randomized or not) that examined the use of albenclazole in CE were identified from the PubMed and the ISI Web of Science databases. Relevant data from the trials were extracted and evaluated. Results: Thirteen studies were included in the review. Albendazole is superior to placebo for inoperable, symptomatic patients (I study). In addition, in 4 trials that tested albendazole as a preoperative adjuvant therapy, the drug resulted in degeneration of hydatid cysts at the time of surgery in a considerable proportion of patients. Furthermore, combined therapy with albenclazole and PAIR (Puncture, Aspiration, Injection of scolicidal agent, and Re-aspiration) technique was found more effective than albendazole or PAIR treatment alone, in a randomized controlled trial examining this issue. Finally, although existing evidence shows some superiority for albendazole compared to mebendazole, there is no definite proof about this. Conclusions: Although the available comparative trials provide considerable evidence for the role of albendazole in patients with CE, there are some important clinical questions that remained unanswered by the studies. One of them is whether the combination of albendazole with praziquantel is superior to albendazole alone when both effectiveness and drug toxicity are taken into account. Also, further studies should also compare the combination of albendazole/ PAIR with albendazole/surgery focusing on both short and long term outcomes.

Keywords: Adjuvant Therapy, Benzimidazoles, Chemotherapy, Clinical Trials, Combination, Databases, Drug, Echinococciasis, Echinococcus Granulosus, Effectiveness, Experience, Granulosus, Human, Human Cystic Echinococcosis, Hydatid Cyst, Hydatid-Disease, ISI, Liver Hydatidosis, Mebendazole, Mebendazole, Methods, Outcomes, Pair, Percutaneous Drainage, Percutaneous Therapy, Praziquantel, Praziquantel, PUBMED, Randomized Controlled Trial, Review, Science, Surgery, Surgical Therapy, Therapy, Toxicity, Treatment, Web of Science

? Falagas, M.E., Charitidou, E. and Alexiou, V.G. (2008), Article and journal impact factor in various scientific fields. *American Journal of the Medical Sciences*, **335** (3), 188-191.

Full Text: [2008\Ame J Med Sci335, 188.pdf](2008/Ame%20J%20Med%20Sci335,%20188.pdf)

Abstract: Background: We tried to provide the scientific community with data to answer the following simple question: What proportion of publications in the various scientific fields is published in journals with impact factor above the median and mean values of the distribution of journal impact factor? Methods: We analyzed and compared the distribution of the impact factor data reduced to the unit of science publication, the article. We calculated the proportion of articles published in journals with impact factor above the journal mean impact factor, journal median impact factor, and article mean impact. Results: For all categories examined, at the article level, the mean impact factor was higher than the median (by 13.7% to 500% for the various scientific categories). The mean impact factor of journals was considerably lower than the mean impact factor of articles (by 0.3 to 6.4 units). The proportion of articles that were published in journals with impact factor above the journals’ median impact factor was well above 50% in 17 of 19 scientific fields examined (all except mathematics and computer science). Significance: Our analysis shows that in most scientific fields examined, it is quite easier to publish an article in the top 50% of journals (based on impact factor calculations) than it is for the article to be included in the top 50% of published articles (based on the assumption made regarding the article’ impact factor).

Keywords: Analysis, Community, Computer, Data, Distribution, Evaluation, Impact, Impact Factor, Journal, Journal Impact, Journal Impact Factor, Journals, MAR, Mathematics, Publication, Publications, Research Funding, Research Productivity, Science, Values

? Zbar, A. and Frank, E. (2011), Significance of authorship position: An open-ended international assessment. *American Journal of the Medical Sciences*, **341** (2), 106-109.

Full Text: 2011\Ame J Med Sci341, 106.pdf; [2011\Ame J Med Sci341, 106-1.pdf](2011/Ame%20J%20Med%20Sci341,%20106-1.pdf)

Abstract: Introduction: The International Committee of Medical Journal Editors (ICMJE) does not recommend guidelines on authorship position, despite its important role in academic promotion. To identify perceptions of authorship position, the authors performed the first study of authorship position using only open-ended questioning. Methods: Articles with at least 3 authors were selected from the top 10 cited and 20 other medical journals. The first, last, and 1 author in-between were selected and asked to identify contributions of first and last authors listed in medical journal articles. The responses were analyzed for differences between perceptions of first versus last authorship. Results: Respondents were more likely to report ICMJE criteria being fulfilled by first authors; however, only 1.1% identified all 3 ICMJE conditions of authorship for either author. ICMJE criteria were no more likely identified by authors of high-impact versus low-impact journals. Significant differences existed between the understandings of appropriate roles for first-versus last-listed authors. First-listed authors were viewed at least 7 times more likely to be involved in study conduct, manuscript writing, have a major study contribution and perform the majority of the work involved. Last-listed authors were at least 7 times more likely to be viewed as having a minor or no contribution to the study, provide funding, be a laboratory head/mentor, hold a senior position and supervise/oversee the study. Conclusions: ICMJE authorship criteria were poorly identified by respondents in this open-ended, international sampling of medical journal authors. Although ICMJE criteria are ideally met by all authors, this does not seem to be well understood or accepted.

Keywords: Articles, Assessment, Author, Authors, Authorship, Authorship Order, Contribution, Differences, Funding, Guidelines, ICMJE, International, Journal, Journals, Medical, Medical Journals, Methods, Order, Perceptions, Promotion, Significant, Writing

? Santos-Oliveira, R. and Machado, M. (2011), Pitfalls with radiopharmaceuticals. *American Journal of the Medical Sciences*, **342** (1), 50-53.

Full Text: [2011\Ame J Med Sci342, 50.pdf](2011/Ame%20J%20Med%20Sci342,%2050.pdf)

Abstract: Introduction: There is a considerable body of evidence describing that the pharmacokinetics and pharmacodynamics of radiopharmaceuticals may be changed by a variety of drugs, disease states and in some cases, surgical procedures. Objective: To systematically search the medical literature and review the published evidence on adverse reactions to radiopharmaceuticals. Method: MEDLINE, EMBASE, International Pharmaceutical Abstracts and Science Citation Index were searched for studies reporting adverse reactions to radiopharmaceuticals. Controlled trials, cohort studies, case-control studies and case series published in major Western languages were considered for the review. Each study included in the present review was described in a narrative way, and major components of each study were reported (ie, research design, patient characteristics, types of drugs and radiopharmaceuticals, dosing information and adverse reactions). Results: The majority of adverse reactions to radiopharmaceuticals described in the literature required little or no treatment, and their negative effects were generally mild and self-limited. Large longitudinal greater than 5-year studies reported prevalence rates of adverse reactions due to radiopharmaceuticals ranging from 0 to 25 cases per 100,000 administrations. Case studies on the use of technetium reported mild adverse reactions; however, some led to potentially harmful complications. Similarly, studies involving fluorodeoxyglucose reported more severe adverse reactions. Conclusion: The literature on radiopharmaceuticals adverse effects is scarce, and just a few studies were conducted to investigate the association between radiopharmaceuticals and adverse reactions. Despite relatively mild and self-limited symptoms, the current widespread use of radiopharmaceuticals requires constant monitoring for adverse reactions.

Keywords: Adverse Reaction, Adverse-Reactions, Case Series, Chemotherapy, Citation, Clinical Report, Drug Interaction, Drug-Interactions, Embase, Information, Literature, Literature Review, Medical, Medline, Nuclear-Medicine, Prevalence, Radiopharmaceuticals, Research, Research Design, Review, Science Citation Index, Sestamibi, TC-99M

# Title: American Journal of Medicine

Full Journal Title: [[American Journal of Medicine](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5195&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=c25b2bd4798ad393ff537cd421c428df)](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5195&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=c25b2bd4798ad393ff537cd421c428df)

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Medicine, General & Internal: Impact Factor 5.960, / (2000)

Garzon, P. and Eisenberg, M.J. (1998), Variation in the mineral content of commercially available bottled waters: Implications for health and disease. *American Journal of Medicine*, **105** (2), 125-130.

Full Text: [A\Ame J Med105, 125.pdf](A/Ame%20J%20Med105,%20125.pdf)

Abstract: PURPOSE: Although the annual consumption of bottled water in North America is 12.7 gallons per capita, little is known about the potential health effects of these waters. We reviewed the amounts of major minerals found in commercially available bottled waters, the recommended daily allowances for these minerals, and their beneficial and harmful effects.

METHODS: We obtained the mineral content of various commercially available bottled waters in North America and Europe from The Pocket Guide to Bottled Water. We then conducted a Medline search to identify articles examining the beneficial and harmful effects of magnesium, sodium, and calcium.

RESULTS: Great Variation exists in the mineral content of commercially available bottled waters. Among the bottled waters that we reviewed, the magnesium content ranges from 0 to 126 mg per liter, the sodium content ranges from 0 to 1, 200 mg per liter, and the calcium content ranges from 0 to 546 mg per liter. Epidemiologic and clinical studies suggest that magnesium may reduce the frequency of sudden death, that sodium contributes to the occurrence of hypertension, and that calcium may help prevent osteoporosis.

CONCLUSION: The ideal bottled water should be rich in magnesium and calcium and have a low sodium content. Because there is great variation in the mineral content of commercially available bottled waters, the actual mineral content of bottled water should be considered when selecting one for consumption. (C) 1998 by Excerpta Medica, Inc.

Keywords: Moderate Sodium Restriction, Essential-Hypertension, Blood-Pressure, Magnesium-Deficiency, Cardiovascular Disease, Sudden-Death, Calcium, Salt, Nutrition, Trial

Saint, S. and Matthay, M.A. (1998), Risk reduction in the intensive care unit. *American Journal of Medicine*, **105** (6), 515-523.

Full Text: [1998\Ame J Med105, 515.pdf](1998/Ame%20J%20Med105,%20515.pdf)

Abstract: Many potentially preventable complications occur in patients who receive intensive care. We have reviewed the epidemiology of three important complications (venous thromboembolism, stress-related upper gastrointestinal bleeding, and vascular catheter-related infection) and evaluated common preventive treatments to provide evidence-based recommendations for prevention. We used English language articles located by MEDLINE or cross-citation, giving preference to articles published in the last 10 years, meta-analyses, and clinical trials that were randomized, double-blinded, and used intention-to-treat analysis. We recommend prophylaxis against venous thromboembolism in most patients, whereas those without respiratory failure or coagulopathy may not require prophylaxis against stress-related upper gastrointestinal hemorrhage. Chlorhexidine gluconate is the preferred antiseptic for disinfecting the skin prior to and during intravascular catheterization. Central venous catheters impregnated with antibacterial or antiseptic agents should be considered in patients at high risk for vascular catheter-related infection. Finally, central venous, pulmonary arterial, and systemic arterial catheters should be changed only when clinically indicated. Am J Med. 1998;105: 515-523. (C) 1998 by Excerpta Medica, Inc.

Keywords: Deep-Vein Thrombosis, Molecular-Weight Heparin, Critically Ill Patients, Low-Dose Heparin, Central Venous Catheters, Pulmonary-Artery Catheters, Cost-Effectiveness Analysis, Total Parenteral-Nutrition, Stress-Ulcer Prophylaxis, Double-Blind Trial

Gurwitz, D. (1999), Magnesium in mineral bottled waters and cerebrovascular stroke. *American Journal of Medicine*, **107** (2), 189-190.

Full Text: [A\Ame J Med107, 189.pdf](A/Ame%20J%20Med107,%20189.pdf)

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Full Text: [A\Ame J Med107, 190.pdf](A/Ame%20J%20Med107,%20190.pdf)

Rodrigo, G., Rodrigo, C. and Burschtin, O. (1999), A meta-analysis of the effects of ipratropium bromide in adults with acute asthma. *American Journal of Medicine*, **107** (4), 363-370.

Full Text: [1999\Ame J Med107, 363.pdf](1999/Ame%20J%20Med107,%20363.pdf)

Abstract: PURPOSE: To review the literature to determine whether inhaled ipratropium bromide provides additive benefits to adults with acute asthma who are being treated with beta-agonists in an emergency department. SUBJECTS AND METHODS: English-language studies, both published (1978 to 1999) and unpublished, were retrieved using Medline, Science Citation Index, Current Contents, bibliographic reviews of primary research, review articles, consultation with experts, and the register of Medical Editors’ Trial Amnesty. Only randomized, double-blind, controlled trials that enrolled patients having an exacerbation of asthma were included. The main outcome measure was pulmonary function; hospital admission rate was also evaluated. RESULTS: Ten studies including 1,483 adults with acute asthma were selected (mean age 32±13 years, 36% men). The overall effect size in SD units of pulmonary function showed a significant benefit from ipratropium (effect size 0.14, 95% confidence interval [CI]: 0.04 to 0.24, P = 0.008). Study-specific effect sizes ranged from 0.03 to 0.63. This pooled effect size was equivalent to a 10% (95% CI: 2% to 18%) increase in forced expiratory volume in 1 second (FEV,) or peak expiratory flow in the ipratropium group compared with the control group. Analysis of the four studies that included patients with extreme obstruction (: FEV, or peak flow <35% of predicted at presentation) showed substantial improvement with ipratropium therapy (effect size 0.38, 95% CI: 0.09 to 0.67). In the five trials (1, 186 patients) that studied the effect of ipratropium administration on hospital admissions, pooled results revealed that ipratropium reduced admission rates significantly (odds ratio 0.62, 95% CI: 0.44 to 0.88, P = 0.007). CONCLUSIONS: The addition of ipratropium to beta-agonist therapy offers a statistically significant, albeit modest, improvement in pulmonary function, as well as a reduction in the rate of hospital admissions. (C) 1999 by Excerpta Medica, Inc.

Keywords: Acute Childhood, Adding Ipratropium, Additive, Administration, Adults, Age, Albuterol, Asthma, Benefit, Conclusions, Confidence, Control, Effects, Efficacy, Emergency, Flow, Forced Expiratory Volume, Function, Group, Hospital, Hospital Admissions, Management, Meta-Analysis, Metaanalysis, Method, Methods, Nebulized Ipratropium, Outcome, Outcome Measure, P, Patients, Randomized, Reduction, Research, Review, Reviews, Salbutamol, Science Citation Index, Size, Subject, Therapy, Trials

Amato, D. (1999), The mineral content of bottled water and other beverages: Implications for health and disease. *American Journal of Medicine*, **107** (4), 404.

Keywords: Calcium, Risk

Full Text: [A\Ame J Med107, 404.pdf](A/Ame%20J%20Med107,%20404.pdf)

Ray, J., Berkwits, M. and Davidoff, F. (1999), The fate of manuscripts rejected by a general medical journal. *The American Journal of Medicine*, **109** (2), 131-135.

Full Text: [1999\Ame J Med109, 131.pdf](1999/Ame%20J%20Med109,%20131.pdf)

Abstract: PURPOSE: The fate of research manuscripts that have been rejected by medical journals is of interest to authors, editors, and peer reviewers, but previous studies were conducted before the widespread availability of computerized literature searches. We update the previous investigations of the fate of rejected research manuscripts by using an electronic literature search and a larger sample, a longer follow-up, and more descriptive journal indexes.

METHODS: Using a retrospective cohort study design, we examined 350 manuscripts rejected by the *Annals of Internal Medicine*, a general medical journal, during 1993 and 1994. We assessed the number of manuscripts that were published after initial rejection, time to eventual publication, journal type (general versus specialty), and journal impact factor (higher scores indicated greater impact) and immediacy index.

RESULTS: of 350 rejected manuscripts, 240 (69%, 95% confidence interval [CI]: 64% to 73%) were eventually published after a mean of 552 days (95% CI: 479 to 544 days, range 121 to 1, 792 days). of 226 rejected research articles and reviews, 159 (70%, 95% CI: 64% to 76%) were subsequently published in specialty journals. During 1993 and 1994, the mean impact factor for articles published in the *Annals* was 9.60 (95% CI: 9.56 to 9.64), compared with a mean of 3.09 (95% CI: 2.80 to 3.37) for the journals in which the rejected articles were subsequently published (mean difference 6.52, 95% CI: 6.24 to 6.81, *P* < 0.0001). The immediacy index was also lower for these journals. Time to publication had a weak negative correlation with the impact factor of the journal in which the article was published (correlation coefficient -0.15, *P* = 0.007).

CONCLUSIONS: The majority of the manuscripts that were rejected from a large general medical journal were eventually published after an average of 18 months. Most were published in specialty journals with lower impact factor and immediacy index ratings.

Lyman, G.H., Kuderer, N.M. and Djulbegovic, B. (2002), Prophylactic granulocyte colony-stimulating factor in patients receiving dose-intensive cancer chemotherapy: A meta-analysis. *The American Journal of Medicine*, **112** (5), 406-411.

Full Text: [2002\Ame J Med112, 406.pdf](2002/Ame%20J%20Med112,%20406.pdf)

Abstract: PURPOSE: Several studies have evaluated the efficacy of the recombinant colony-stimulating factors in reducing the severity and duration of neutropenia and the risk of infection associated with dose-intensive cancer chemotherapy. We performed a meta-analysis to define better the magnitude of this effect and to assess the generalizability of the results among different diseases and types of treatment.

MATERIALS AND METHODS: We used electronic databases and citation lists to identify controlled clinical trials of the prophylactic efficacy of the colony-stimulating factors on neutropenic complications. We selected randomized trials of the use of recombinant colony-stimulating factors before the onset of fever or neutropenia following systemic chemotherapy for solid tumors or malignant lymphomas.

RESULTS: We identified eight controlled trials (n = 1144 patients) of prophylactic colony-stimulating factors, including five trials of filgrastim (recombinant granulocyte colony-stimulating factors) and three studies of lenograstim (glycosylated granulocyte recombinant colony-stimulating factors). Five trials were double-blind and placebo-controlled; three included untreated controls. Use of recombinant colony-stimulating factors was associated with a reduced risk of febrile neutropenia (odds ratio [OR] = 0.38; 95% confidence interval [CI]: 0.29 to 0.49), documented infection (OR = 0.51; 95% CI: 0.36 to 0.73), and infection-related mortality (OR = 0.60; 95% CI: 0.30 to 1.22), but a greater risk of bone pain (OR = 2.9; 95% CI: 1.6 to 4.8).

CONCLUSION: In this meta-analysis, recombinant colony-stimulating factors were effective in reducing the risk of febrile neutropenia and documented infection associated with several malignancies and dose-intensive treatment regimens. (C) 2002 by Excerpta Medica, Inc.

Keywords: Non-Hodgkins-Lymphoma, Induction Chemotherapy, Neutropenia, Lenograstim, Filgrastim, Morbidity, Trials, CSF

Nordmann, A.J., Woo, K., Parkes, R. and Logan, A.G. (2003), Balloon angioplasty or medical therapy for hypertensive patients with atherosclerotic renal artery stenosis? A meta-analysis of randomized controlled trials. *The American Journal of Medicine*, **114** (1), 44-50.

Full Text: [2003\Ame J Med114, 44.pdf](2003/Ame%20J%20Med114,%2044.pdf)

Abstract: PURPOSE: The optimal treatment for hypertensive patients with atherosclerotic renal artery stenosis is controversial. We performed a meta-analysis comparing the effects of balloon angioplasty and medical therapy in these patients.

METHODS: We searched MEDLINE, EMBASE, the Science Citation index, the Cochrane Controlled Trials Registry, and reference lists. Authors of published trials were contacted.

RESULTS: We identified three trials involving a total of 210 patients with moderate-to-severe (greater than or equal to50%) unilateral or bilateral atherosclerotic renal artery stenosis and poorly controlled hypertension who were followed for at least 3 months after intervention. Balloon angioplasty was significantly more effective in reducing blood pressure than was medical therapy; the weighted mean difference between the two treatments was - 7 mm Hg (95% confidence interval [CI]: - 12 to - 1 mm Hg) for systolic blood pressure and - 3 mm Hg (95% CI: - 6 to - 1 mm Hg) for diastolic blood pressure. There was no consistent difference in changes in renal function. Patients treated with balloon angioplasty were more likely to have patent renal arteries after 12 months (52% vs. 19%; odds ratio [OR] = 4.2; 95% CI: 1.8 to 9.8), used fewer antihypertensive medications, and appeared to have fewer major cardiovascular and renovascular complications (OR = 0.27; 95% CI: 0.06 to 1.23; P = 0.09).

CONCLUSION: Balloon angioplasty has a modest but significant effect on blood pressure and should be considered for patients with atherosclerotic renal artery stenosis and poorly controlled hypertension. There is no evidence supporting its use in improving or preserving renal function, although none of the trials were designed to address this issue. (C) 2003 by Excerpta Medica Inc.

Keywords: Blood-Pressure, Renovascular Disease, Clinical-Trials, Quality, Bias

? Rahman, M. and Fukui, T.S. (2003), Geography of randomized controlled trials in general internal medicine: Is the United States’ share declining? *American Journal of Medicine*, **114** (6), 510-511.

Full Text: [2003\Ame J Med114, 510.pdf](2003/Ame%20J%20Med114,%20510.pdf)

Keywords: General, Medicine, Randomized, Randomized Controlled Trials, United States

? Wijeysundera, D.N., Naik, J.S. and Beattie, W.S. (2003), Alpha-2 adrenergic agonists to prevent perioperative cardiovascular complications: A meta-analysis. *American Journal of Medicine*, **114** (9), 742-752.

Full Text: [2003\Ame J Med114, 742.pdf](2003/Ame%20J%20Med114,%20742.pdf)

Abstract: PURPOSE: To investigate the effects of alpha(2)-adrenergic agonists on perioperative mortality and cardiovascular complications in adults undergoing surgery. METHODS: MEDLINE (1966 to May 2002), EMBASE (1980 to May 2002), the Cochrane Clinical Trials Register, the Science Citation Index, and bibliographies of included articles were searched without language restriction. Randomized trials comparing preoperative, intraoperative, or postoperative (first 48 hours) administration of clonidine, dexmedetomidine, or mivazerol with controls were included. Studies had to report any of the following outcomes: mortality, myocardial infarction, ischemia, or supraventricular tachyarrhythmia. Treatment effects were calculated using the fixed-effects model. Heterogeneity was assessed using the Q test. RESULTS: Twenty-three trials comprising 3395 patients were included. Overall, alpha(2)-adrenergic agonists reduced mortality (relative risk [RR] = 0.64; 95% confidence interval [CI]: 0.42 to 0.99; P = 0.05) and ischemia (RR = 0.76; 95% CI: 0.63 to 0.91; P = 0.003) significantly. They also reduced mortality (RR = 0.47; 95% CI: 0.25 to 0.90; P = 0.02) and myocardial infarction (RR = 0.66; 95% CI: 0.46 to 0.94; P = 0.02) during vascular surgery. During cardiac surgery, alpha(2)-adrenergic agonists reduced ischemia (RR = 0.71; 95% CI: 0.54 to 0.92; P = 0.01) and were associated with trends toward lower mortality (RR = 0.49; 95% CI: 0.12 to 1.98; P = 0.3) and a reduced risk of myocardial infarction (RR = 0.83; 95% CI: 0.35 to 1.96; P = 0.7). CONCLUSION: Alpha-2 adrenergic agonists reduce mortality and myocardial infarction following vascular surgery. During cardiac surgery, they reduce ischemia and may also have effects on mortality and myocardial infarction. Large randomized trials are needed to evaluate these agents during cardiac and vascular surgery.

Keywords: Artery Bypass-Surgery, Articles, Bibliographies, Citation, Clinical-Trials, Dexmedetomidine Infusion, Double-Blind, High-Risk Patients, Hypertensive Patients, Intensive-Care Unit, Language, Medline, Meta-Analysis, Model, Myocardial-Ischemia, Noncardiac Surgery, Outcomes, Risk, Science, Science Citation Index, Surgery, Trends, Vascular Surgery, Vascular-Surgery

? Druss, B.G. and Marcus, S.C. (2005), Tracking publication outcomes of National Institutes of Health grants. *The American Journal of Medicine*, **118** (6), 658-663.

Full Text: [2005\Ame J Med118, 658.pdf](2005/Ame%20J%20Med118,%20658.pdf)

Abstract: PURPOSE: The peer-review literature is the primary medium through which the findings of funded research are evaluated by and disseminated to the broader scientific community. This study examines when and how grants funded by the National Institutes of Health (NIH) lead to publications. METHODS: Data on all investigator-initiated R01 grants funded during 1996 (n = 18 211) were extracted from the NIH’s Computer Retrieval of Information on Scientific Projects Web site. These data were linked with all MEDLINE articles published during and up through 4 years after completion of each grant using NIH grant numbers reported in the manuscript. Analyses examined the number, timing, and correlates of all linked publications and publications in core journals (179 journals, comprising the top 100 Institute for Scientific Information or 120 Abridged Index Medicus journals). RESULTS: On average, each grant produced 7.6 MEDLINE manuscripts (95% confidence interval [CI]: 7.47 to 7.69) and 1.61 publications in a core journal (95% CI: 1.56 to 1.65). In multivariable analyses among universities, more manuscripts and publications in core journals were seen for competing renewals versus new grants, for projects reviewed by basic science study sections, for full professors, and for universities with graduate programs ranked in the top 10 by US News and World Report. However, all grant, investigator, and institutional strata produced substantial numbers of publications per grant. CONCLUSIONS: The findings support the feasibility and potential utility of efforts to study the link between grant funding and research findings, an early step in the process by which funded science leads to improved clinical and public health. &COPY; 2005 Elsevier Inc. All rights reserved.

Keywords: Bibliometric Methods, Clinical-Trials, Core, Impact, Journals, Literature, Medline, Peer Review, Public Health, Publications, Research, Research Funding Policy, Science, Translation, US

? Siris, E.S., Selby, P.L., Saag, K.G., Borgstrom, F., Herings, R.M.C. and Silverman, S.L. (2009), Impact of osteoporosis treatment adherence on fracture rates in North America and Europe. *American Journal of Medicine*, **122** (2), S3-S13.

Full Text: [2009\Ame J Med122, S3.pdf](2009/Ame%20J%20Med122,%20S3.pdf)

Abstract: Fragility fractures associated with osteoporosis constitute a significant public health concern. Clinical trials have shown that a variety of agents-bisphosphonates, raloxifene, calcitonin, hormone replacement therapy, teriparatide, and strontium ranelate-can reduce the risk of osteoporosis-related fragility fractures. However, low levels of compliance and persistence in the real-life setting mean that efficacy benefits observed in clinical trials with these agents may not translate into equivalent effectiveness in daily practice. The aim of this review is to provide a comprehensive evaluation of compliance and persistence data from retrospective/observational studies, with particular reference to studies that consider the effects on fracture rates. PubMed of the National Center for Biotechnology Information (NCBI) and Web of Science databases were searched for publications detailing observational or retrospective analyses of adherence, compliance, and persistence with osteoporosis therapies. In addition, authors provided relevant studies that were not retrieved using the search criteria. In total, 17 unique publications were identified. Analysis of the publications indicated that low compliance and persistence rates for osteoporosis therapies in the real-life setting result in increased rates of fragility fractures. The results emphasize the importance of good treatment compliance and persistence with osteoporosis therapies in order to achieve a significant therapeutic benefit and thereby reduce the burden that osteoporosis and associated fractures place on individuals and healthcare systems. (C) 2009 Elsevier Inc. All rights reserved. The American Journal of Medicine (2009) 122, S3-S13.

Keywords: Adherence, Authors, Biotechnology, Bisphosphonate Therapy, Burden, Clinical Trials, Compliance, Database Analysis, Databases, Drug-Therapy, Economic Burden, Effectiveness, Efficacy, Europe, Evaluation, Fracture, Impact, Journal, Medication Compliance, Osteoporosis, Persistence, Persistence, Postmenopausal Osteoporosis, Practice, Public Health, Publications, Pubmed, Review, Risk, Science, Therapy, Treatment, United-States, Web of Science, Women

? Nordmann, A.J., Suter-Zimmermann, K., Bucher, H.C., Shai, I., Tuttle, K.R., Estruch, R. and Briel, M. (2011), Meta-analysis comparing mediterranean to low-fat diets for modification of cardiovascular risk factors. *American Journal of Medicine*, **124** (9), 841-851.

Full Text: [2011\Ame J Med124, 841.pdf](2011/Ame%20J%20Med124,%20841.pdf)

Abstract: BACKGROUND: Evidence from individual trials comparing Mediterranean to low-fat diets to modify cardiovascular risk factors remains preliminary. METHODS: We systematically searched MEDLINE, EMBASE, Biosis, Web of Science, and the Cochrane Central Register of Controlled Trials from their inception until January 2011, as well as contacted experts in the field, to identify randomized controlled trials comparing Mediterranean to low-fat diets in overweight/obese individuals, with a minimum follow-up of 6 months, reporting intention-to-treat data on cardiovascular risk factors. Two authors independently assessed trial eligibility and quality. RESULTS: We identified 6 trials, including 2650 individuals (50% women) fulfilling our inclusion criteria. Mean age of enrolled patients ranged from 35 to 68 years, mean body mass index from 29 to 35 kg/m(2). After 2 years of follow-up, individuals assigned to a Mediterranean diet had more favorable changes in weighted mean differences of body weight (-2.2 kg; 95% confidence interval [CI], -3.9 to -0.6), body mass index (-0.6 kg/m(2); 95% CI, -1 to -0.1), systolic blood pressure (-1.7 mm Hg; 95% CI, -3.3 to -0.05), diastolic blood pressure (-1.5 mm Hg; 95% CI, -2.1 to -0.8), fasting plasma glucose (-3.8 mg/dL, 95% CI, -7 to -0.6), total cholesterol (-7.4 mg/dL; 95% CI, -10.3 to -4.4), and high-sensitivity C-reactive protein (-1.0 mg/L; 95% CI, -1.5 to -0.5). The observed heterogeneity across individual trials could, by and large, be eliminated by restricting analyses to trials with balanced co-interventions or trials with restriction of daily calorie intake in both diet groups. CONCLUSION: Mediterranean diets appear to be more effective than low-fat diets in inducing clinically relevant long-term changes in cardiovascular risk factors and inflammatory markers. (C) 2011 Elsevier Inc. All rights reserved. The American Journal of Medicine (2011) 124, 841-851.

Keywords: Adherence, Authors, Blood, Blood Pressure, Body Mass Index, Body Weight, Cardiovascular, Cardiovascular Risk, Cholesterol, Clinical-Trials, Cochrane, Coronary-Heart-Disease, Diet, Embase, Factors, Fasting, Follow-Up, Health-Care, Journal, Low-Fat Diet, Mediterranean Diet, Medline, Meta-Analysis, Myocardial-Infarction, Patients, Plasma, Pressure, Randomized Controlled Trials, Randomized-Trial, Risk, Risk Factors, Science, Style Diet, Total Cholesterol, Web of Science, Weight-Loss, Women

# Title: American Journal of Neuroradiology

Full Journal Title: American Journal of Neuroradiology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

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Full Text: [2008\Ame J Neu29, 5.pdf](2008/Ame%20J%20Neu29,%205.pdf)

Keywords: Journal

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Full Text: [2010\Ame J Neu31, 1853.pdf](2010/Ame%20J%20Neu31,%201853.pdf)

Abstract: Background and purpose: In recent years, the role of cta and ctp for vasospasm diagnosis in the setting of asah has been the subject of many research studies. The purpose of this study was to perform a meta-analysis of the diagnostic performance of cta and ctp for vasospasm in patients with asah by using dsa as the criterion standard. Materials and methods: The search strategy for research studies was based on the cochrane handbook for systematic reviews, including literature data bases (Pubmed, embase, cochrane database of systematic reviews, and the web of science) And reference lists of manuscripts published from january 1996 to February 2009. The inclusion criteria were the following: 1) Published manuscripts, 2) Original research studies with prospective or retrospective data, 3) Patients with asah, 4) Cta or ctp as the index test, and 5) Dsa as the reference standard. Three reviewers independently assessed the quality of these research studies by using the quadas tool. Pooled estimates of sensitivity, specificity, lr+, lr-, dor, and the sroc curve were determined. Results: Cta and ctp searches yielded 505 and 214 manuscripts, respectively. Ten research studies met inclusion criteria for each cta and ctp search. Six cta and 3 ctp studies had sufficient data for statistical analysis. Cta pooled estimates had 79.6% Sensitivity 195% ci, 74.9%-83.8%), 93.1% Specificity 195% ci, 91.7%-94.3%), 18.1 Lr+ (95% Ci, 7.3-45.0), And 0.2 Lr- (95% Ci, 0.1-0.4); And ctp pooled estimates had 74.1% Sensitivity (95% Ci, 58.7% - 86.2%), 93.0% Specificity (95% Ci, 79.6%-98.7%), 9.3 Lr+ (95% Ci, 3.4-25.9), And 0.2 Lr- (95% Ci, 0.04-1.2). Overall dors were 124.5 (95% Ci, 28.4-546.41 For cta and 43.0 (95% Ci, 6.5-287.1) For ctp. Area under the sroc curve was 98 +/- 2.0% For cta and 97 +/- 3.0% For ctp. Conclusions: The high diagnostic accuracy determined for both cta and ctp in this meta-analysis suggests that they are potentially valuable techniques for vasospasm diagnosis in asah. Awareness of these results may impact patient care by providing supportive evidence for more effective use of cta and ctp imaging in asah.

Keywords: Accuracy, Analysis, Aneurysmal Subarachnoid Hemorrhage, Computed Tomographic Angiography, CT, Curve, Diagnosis, Digital-Subtraction-Angiography, Health-Care, Imaging, Impact, Literature, Management, Meta-Analysis, Research, Science, Statistical, Strategy, System, Systematic, Systematic Reviews, Utility, Web of Science

# Title: American Journal of Nursing

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ISSN: 0002-936X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

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Full Text: [-1959\Ame J Nur53, 838.pdf](-1959/Ame%20J%20Nur53,%20838.pdf)

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Full Text: [-1959\Ame J Nur59, 544.pdf](-1959/Ame%20J%20Nur59,%20544.pdf)

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Full Text: [2003\Ame J Nur103, 120.pdf](2003/Ame%20J%20Nur103,%20120.pdf)

# Title: American Journal of Obstetrics and Gynecology

Full Journal Title: [American Journal of Obstetrics and Gynecology](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6688&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=2e3ee2498c68929d556651561d218903)

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Publisher Address: 11830 Westline Industrial DR, St Louis, MO 63146-3318

Subject Categories:

Obstetrics & Gynecology: Impact Factor 2.871, / (2001); Impact Factor 2.556, 5/52 (2002)

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Full Text: 1994\Ame J Obs Gyn170, 495.pdf

Abstract: OBJECTIVE: We compared trends and current levels of cesarean section delivery by indication in four countries to help us understand factors underlying national differences in obstetric delivery practice and identify pathways to lower cesarean rates.

STUDY DESIGN: We carried out a measurement of change in the use of cesarean delivery by indication in Norway Scotland, Sweden, and the United States during intervals centered on 1980, 1985, and 1990. Indication for cesarean delivery was determined by a standard set of selection rules.

RESULTS: The rate of growth of national cesarean section rates dropped significantly between the time periods 1980 to 1985 and 1985 to 1990 in all four countries; in Sweden this led to an actual decline in the cesarean section rate. Fetal distress and previous cesarean section were important contributors to cesarean section growth in three of the countries in 1980 to 1985, but their contribution to growth dropped off sharply in 1985 to 1990. By the 1990 interval, the overall rate ranged from 24% (United States) to 11% (Sweden), and all four countries had similar cesarean section rates for breech presentation, fetal distress, and “other” indications. Cesarean section deliveries for previous cesarean section and dystocia accounted for the substantially higher U.S. cesarean section rate.

CONCLUSIONS: Cesarean section rates are approaching stability in the four countries and have declined in Sweden, Previous cesarean delivery and dystocia may be the major sources of future reductions in the U.S. cesarean rate. The Swedish example shows that it is possible to reduce a relatively low national cesarean section rate.

Keywords: Cesarean Section Delivery, International Comparisons, Perinatal-Mortality, Rates, Trial, Risk

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Full Text: [A\Ame J Obs Gyn172, 1903.pdf](A/Ame%20J%20Obs%20Gyn172,%201903.pdf)

Abstract: The cesarean section rate, which approached 25%, has stabilized and started a modest decline. A stated United States national goal by the year 2000 is a rate of 15%. Suggested rates are 12% for primary and 3% for repeat cesarean sections. The major indications for cesarean section are prior cesarean delivery (8%), dystocia (7%), breech presentation (4%), fetal distress (2% to 3%), and others. The major areas of reduction must occur in the categories of prior cesarean delivery and dystocia. An expanded use of trial of labor and vaginal birth after a prior cesarean section will produce further reductions. Countries in Europe achieve >50% vaginal birth after a prior cesarean section compared with 25% in the United States. A heightened awareness must occur regarding the decision to perform the first cesarean section. The residual impact, a scarred uterus, affects 12% to 14% of women seen for delivery. Even if 50% achieve a vaginal birth after a prior cesarean section, the national goals are unachievable. The obstetrician must consciously consider the impact of “once a cesarean, always a scar.”

Keywords: Cesarean Section, Dystocia, Vaginal Birth After A Prior Cesarean Section, Uterine Scar, Section Rates, Vaginal Birth, Active Management, Physician Factor, United-States, Delivery, Labor, Term, Determinant, Mortality

Roach, V.J., Lau, T.K. and Kee, W.D.N. (1997), The quality of citations in major international obstetrics and gynecology journals. *American Journal of Obstetrics and Gynecology*, **177** (4), 973-975.

Full Text: [1997\Ame J Obs Gyn177, 973.pdf](1997/Ame%20J%20Obs%20Gyn177,%20973.pdf)

Abstract: OBJECTIVE: Our goal was to determine the error rate in references in articles published in three major international journals in obstetrics and gynecology.

STUDY DESIGN: All issues (excluding supplements) for the year 1995 of the American Journal of Obstetrics and Gynecology, the Australian and New Zealand Journal of Obstetrics and Gynaecology, and the British Journal of Obstetrics and Gynaecology were examined. References were numbered sequentially, and 50 randomly selected references from each journal were checked against the original for accuracy.

RESULTS: Errors were found in the majority of references. The lowest error rate was 55.6% from the Australian and New Zealand Journal of Obstetrics and Gynaecology, and the highest was 66.7% from the British Journal of Obstetrics and Gynaecology. The difference between journals was not statistically significant. The most frequent types of error were in the title of the article or in the authors’ names.

CONCLUSIONS: Error rates in major international journals in obstetrics and gynecology are high, and care must be taken by authors and journal staff to improve the quality of published articles.

Keywords: Bibliography, Citations, References, Publications, References, Accuracy, Anesthesia

Notes: highly cited

? Gifford, R.W., August, P.A., Cunningham, G., Green, L.A., Lindheimer, M.D., McNellis, D., Roberts, J.M., Sibai, B.M. and Taler, S.J. (2000), Report of the National High Blood Pressure Education Program Working Group on High Blood Pressure in Pregnancy. *American Journal of Obstetrics and Gynecology*, **183** (1), S1-S22.

Full Text: [2000\Ame J Obs Gyn183, S1.pdf](2000/Ame%20J%20Obs%20Gyn183,%20S1.pdf)

Abstract: This report updates the 1990 “National High Blood Pressure Education Program Working Group Report on High Blood Pressure in Pregnancy” acid focuses on classification, pathophysiologic features, and management of the hypertensive disorders of pregnancy. Through a combination of evidence-based medicine and consensus this report updates contemporary approaches to hypertension control during pregnancy by expanding on recommendations made in “The Sixth Report of the Joint National Committee on Prevention, Detection. Evaluation. and Treatment of High Blood Pressure.” The recommendations to use Korotkoff phase V for determination of diastolic pressure and to eliminate edema as a criterion for diagnosing preeclampsia are discussed. In addition, the use as a diagnostic criterion of blood pressure increases of 30 mm Hg systolic or 15 mm Hg diastolic with blood pressure <140/90 mm Hg has not been recommended, because available evidence shows that women with blood pressures fitting this description are not more likely to have adverse outcomes. Management distinctions are made between chronic hypertension that is present before pregnancy and hypertension that occurs as part of the pregnancy-specific condition of preeclampsia, as well as management considerations for women with comorbid conditions. A discussion of the pharmacologic treatment of hypertension during pregnancy includes recommendations for specific agents. The use of low-dose aspirin, calcium, or other dietary supplements in the prevention of preeclampsia is described, and expanded sections on counseling women for future pregnancies and recommendations for future research are included.

Keywords: Acute-Renal-Failure, Eclampsia, Elevated Liver-Enzymes, Gestational Hypertension Remote, Hypertension, Intrauterine Growth-Retardation, Long-Term Prognosis, Low-Dose Aspirin, Monitored Outpatient Management, Preeclampsia, Pregnancy, Randomized Controlled Trial, Research, Severe Preeclampsia, Treatment, V Korotkoff Sounds

Kroumpouzos, G. and Cohen, L.M. (2003), Specific dermatoses of pregnancy: An evidence-based systematic review. *American Journal of Obstetrics and Gynecology*, **188** (4), 1083-1092.

Full Text: [2003\Ame J Obs Gyn188, 1083.pdf](2003/Ame%20J%20Obs%20Gyn188,%201083.pdf)

Abstract: OBJECTIVE: We conducted an evidence-based systematic analysis of the literature on specific dermatoses of pregnancy.

STUDY DESIGN: The bibliographic databases MEDLINE and EMBASE were screened for studies and reports in all languages about herpes pastationis, pruritic urticarial papules and plaques of pregnancy, pruritic folliculitis of pregnancy, and prurigo of pregnancy from January 1962 to January 2002. As main index terms, including analogs and derivatives, we used the names of specific dermatoses of pregnancy. Intrahepatic cholestasis of pregnancy, not a primary dermatosis, was included herein because this disorder is associated with pregnancy and its secondary skin manifestations must be differentiated from specific dermatoses of pregnancy. Other sources were abstract books of symposia and congresses, theses, textbooks, monographs, reviews, editorials, letters to the editor, free or rapid communications, and the reference lists from all the articles that were retrieved. All articles selected for inclusion in this review were evaluated critically with regard to their impact factor and evidence-based contribution to this field, as measured by their citation index and impact factor of the journal in which they were published. Approximately 39% of articles met the selection criteria.

RESULTS: The clinical features and prognosis of the specific, dermatoses of pregnancy have been delineated through a number of retrospective and cohort studies. The molecular biologic and immunogenetic properties of herpes gestationis, pruritic urticarial papules and plaques of pregnancy, and intrahepatic cholestasis of pregnancy have been further clarified. A meta-analysis in this review reveals a higher prevalence of multiple gestation pregnancy (11.7%) among patients with pruritic urticarial papules and plaques of pregnancy. Several investigations have unraveled the fetal complications in intrahepatic cholestasis of pregnancy and herpes gestationis. New treatment modalities in intrahepatic cholestasis of pregnancy (cholestyramine, ursodeoxycholic acid) and herpes gestationis (cyclosporin, intravenous immunoglobulin, and tetracyclines postpartum) have shown promise and warrant further evaluation.

CONCLUSION: During the past few decades, a significant amount of new data has provided new insights into the classification, pathogenesis, treatment, prognosis, and fetal risks that are associated with the specific dermatoses of pregnancy.

Keywords: Intrahepatic Cholestasis of Pregnancy, Herpes Gestationis, Pruritic Urticarial Papules and Plaques of Pregnancy, Pruritic Folliculitis of Pregnancy, Prurigo of Pregnancy, Pruritic Urticarial Papules, Familial Intrahepatic Cholestasis, Herpes-Gestationis Autoantibodies, Ursodeoxycholic Acid Therapy, Anti-Hla Antibodies, Pemphigoid-Gestationis, Bile-Acids, Polymorphic Eruption, S-Adenosylmethionine, Double-Blind

? Sung, V.W., Schleinitz, M.D., Rardin, C.R., Ward, R.M. and Myers, D.L. (2007), Comparison of retropubic vs transobturator approach to midurethral slings: A systematic review and meta-analysis. *American Journal of Obstetrics and Gynecology*, **197** (1), 3-11.

Full Text: 2007\Ame J Obs Gyn197, 3.pdf

Abstract: To systematically review the literature and to quantitatively compare outcomes and complications following retropubic vs transobturator approach to midurethral slings. We searched PUBMED, OVID, EMBASE, CINAHL, POPLINE, Web of Science, Cochrane Collaboration resources, TRIP, Global Health databases, and abstracts from relevant meetings from 1990 to 2006. We included all studies that compared retropubic and transobturator approaches to midurethral slings and that defined outcomes. We used random-effects models to estimate pooled odds ratios and 95% confidence intervals for objective and subjective failure, complications, and de novo irritative voiding symptoms. Six randomized trials and 11 cohort studies compared transobturator and retropubic approaches to midurethral slings. There was insufficient evidence to support if one approach leads to better objective outcomes. We found no difference in subjective failure between the 2 approaches after pooling data from randomized trials (pooled odds ratio OR 0.85, confidence interval 95% Cl 0.38- 1.92). The transobturator approach was associated with a decreased risk of complications (pooled OR 0.40, 95% Cl 0.19- 0.83]). The transobturator approach to midurethral slings is associated with a lower risk of complications; however, it is still unclear if one approach results in superior objective or subjective outcomes.

Keywords: Cochrane, Cohort Studies, Collaboration, Complications, Confidence Intervals, Databases, EMBASE, Follow-up, Free Vaginal Tape, Health, Literature, Meta-Analysis, Midurethral Sling, Multicenter, Outcomes, Quality, Randomized-Trial, Ratio, Retropubic, Review, Risk, Science, Stress Urinary-Incontinence, Suburethral Tape, Surgical-Treatment, Symptoms, Systematic, Systematic Review, Transobturator, TVT, Web of Science

? Brandt, J.S., Downing, A.C., Howard, D.L., Kofinas, J.D. and Chasen, S.T. (2010), Citation classics in obstetrics and gynecology: The 100 most frequently cited journal articles in the last 50 years. *American Journal of Obstetrics and Gynecology*, **203** (4), Article Number: 355.e1-355.e7.

Full Text: [2010\Ame J Obs Gyn203, 355.e1.pdf](2010/Ame%20J%20Obs%20Gyn203,%20355.e1.pdf)

Abstract: OBJECTIVE: Our objective was to characterize the most frequently cited articles published in obstetrics and gynecology journals during the last 50 years. STUDY DESIGN: We utilized the 2008 edition of Journal Citation Reports and Social Sciences Citation Index database to determine the most frequently cited articles published after 1956. Articles were evaluated for several characteristics, and an unadjusted categorical analysis was performed to compare pre- and post-1980 articles. RESULTS: The 100 most frequently cited articles were published in 11 journals between 1957 and 2004. Most articles were published by US-based authors. Forty-four articles were related to obstetrics and 56 were related to gynecology. The most common study design was observational. There were only 7 randomized controlled trials, and randomized controlled trials were not more common after 1980 (6.3% vs 8.1%; P = .71). CONCLUSION: Most “citation classics” in obstetrics and gynecology are observational studies published in high-impact journals by US-based authors after 1980.

Keywords: Bibliometrics, Citation, Citation Analysis, Citation Classics, Design, Gynecology, Journals, Landmark Articles, Obstetrics

? Gallos, I.D., Shehmar, M., Thangaratinam, S., Papapostolou, T.K., Coomarasamy, A. and Gupta, J.K. (2010), Oral progestogens vs levonorgestrel-releasing intrauterine system for endometrial hyperplasia: A systematic review and metaanalysis. *American Journal of Obstetrics and Gynecology*, **203** (6), Article Number: e1-10.

Full Text: 2010\Ame J Obs Gyn203, e1.pdf

Abstract: OBJECTIVE: To conduct a systematic review and metaanalysis of studies evaluating the regression rate of endometrial hyperplasia with oral progestogens and levonorgestrel-releasing intrauterine system. STUDY DESIGN: Searches were conducted on Medline, Embase, Cochrane Library, and Web of Science, and reference lists of relevant articles were examined. The methodologic index for nonrandomized studies was used for quality assessment. Metaanalysis was performed with random effects model. RESULTS: There were 24 observational studies (1001 women), of low methodologic quality, evaluating the outcome of regression of endometrial hyperplasia with oral progestogens or levonorgestrel-releasing intrauterine system. Metaanalysis showed that oral progestogens achieved a lower pooled regression rate compared with levonorgestrel-releasing intrauterine system for complex (pooled rate, 66% vs 92%; P < .01) and atypical hyperplasia (pooled rate, 69% vs 90%; P = .03). There was no statistical difference in simple hyperplasia (pooled rate, 89% vs 96%; P = .41). CONCLUSION: Oral progestogens appear to induce a lower disease regression rate than Levonorgestrel-releasing intrauterine system in the treatment of endometrial hyperplasia.

Keywords: Adenocarcinoma, Assessment, Cochrane, Complex Atypical Hyperplasia, Design, Disease, Endometrial Hyperplasia, IUD, LNG-IUS, Long-Term, Management, Model, Observational Studies, Outcome, Progestogens, Review, Science, Statistical, Systematic, Systematic Review, Term-Follow-up, Therapy, Treatment, Web of Science, Well-Differentiated Carcinoma, Women, Young-Women

? Bissonnette, J.M. and Smith, V.J. (2011), Comment on the 100 most frequently cited ob-gyn journal articles in the last 50 years. *American Journal of Obstetrics and Gynecology*, **204** (6), E12-E13.

Full Text: [2011\Ame J Obs Gyn204, E12.pdf](2011/Ame%20J%20Obs%20Gyn204,%20E12.pdf)

Keywords: Journal

? Brandt, J.S. and Chasen, S.T. (2011), Comment on the 100 most frequently cited ob-gyn journal articles in the last 50 years REPLY. *American Journal of Obstetrics and Gynecology*, **204** (6), E13.

Full Text: [2011\Ame J Obs Gyn204, E13.pdf](2011/Ame%20J%20Obs%20Gyn204,%20E13.pdf)

Keywords: Journal

# Title: American Journal of Occupational Therapy

Full Journal Title: American Journal of Occupational Therapy

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Holguin, J.A. (2009), Occupational therapy and the *Journal Citation Reports*: 10-Year performance trajectories. *American Journal of Occupational Therapy*, **63** (1), 105-112.

Full Text: [2009\Ame J Occ The63, 105.pdf](2009/Ame%20J%20Occ%20The63,%20105.pdf)

Abstract: The purpose of this study was to document performance of occupational therapy journals on the metrics of the Journal Citation Reports (JCR), the annually appearing index used as a yardstick to assess the quality of scholarly publications. Outcomes for the field’s two indexed journals, the American Journal of Occupational Therapy and OTJR: Occupation, Participation and Health, were assessed over a 10-year period (1996-2005) to determine their overall standing and patterns of change on each of the JCR’s five metrics. The mean category ranking for the two journals was generally above the 50th percentile. However, they performed least adequately and evidenced a downward trend over time on the most widely used metric (the journal impact factor). Possible reasons underlying this latter result are explored, pressing implications of the overall findings for practice and research are discussed, and strategic steps toward ethically safeguarding the profession’s viability are offered.

Keywords: Bibliometrics, Citation, Health, Impact, Impact Factor, Journals, Occupational Therapy, Peer Review, Periodicals, Publication, Publications, Quality, Research

? Classen, S., Levy, C., McCarthy, D., Mann, W.C., Lanford, D. and Waid-Ebbs, J.K. (2009), Traumatic brain injury and driving assessment: An evidence-based literature review. *American Journal of Occupational Therapy*, **63** (5), 580-591.

Full Text: [2009\Ame J Occ The63, 508.pdf](2009/Ame%20J%20Occ%20The63,%20508.pdf)

Abstract: OBJECTIVE. We conducted a literature review of assessment tools predicting driving performance for people with traumatic brain injury (TBI). METHOD. Data sources were Web of Science, EBSCOhost, PubMed, and recently published literature from experts and team members not yet catalogued in the databases. We used the American Academy of Neurology’s classification criteria to extract data from 13 studies, and we assigned a class (I-IV, with I being the highest level of evidence) to each study. We grouped primary studies into categories of driving assessment (neuropsychological; simulator; off-road; self-report, other report, and postinjury disability status; and comprehensive driving evaluation) and synthesized the predictability of these tools as it relates to driving performance for people with TBI. CONCLUSIONS. To assist clinicians and researchers in making decisions regarding testing the driving performance of people with TBI, we provide recommendations for neuropsychological tests; off-road tests; self-report, other report, and postinjury disability status; and comprehensive driving evaluation.

Keywords: Ability, Assessment, Automobile Driving, Brain, Brain Injuries, Databases, Driving, Evaluation, Fitness, Injury, Literature, Literature Review, Primary, Psychological Tests, Pubmed, Reproducibility of Results, Researchers, Return, Review, Risk Assessment, Science, TBI, Tests, Traumatic Brain Injury, Web of Science

? Gutman, S.A. (2010), Online publication and the Impact Factor. *American Journal of Occupational Therapy*, **64** (1), 7-8.

Full Text: [2010\Ame J Occ The64, 7.pdf](2010/Ame%20J%20Occ%20The64,%207.pdf)

Keywords: Bibliometrics, Impact, Impact Factor, Impact-Factor, Journal Impact Factor, Occupational Therapy, Occupational-Therapy, Publication, Publications

? Classen, S., Bewernitz, M. and Shechtman, G. (2011), Driving simulator sickness: An evidence-based review of the literature. *American Journal of Occupational Therapy*, **65** (2), 179-188.

Full Text: [2011\Ame J Occ The65, 179.pdf](2011/Ame%20J%20Occ%20The65,%20179.pdf)

Abstract: OBJECTIVE. Guided by the Occupational Therapy Practice Framework: Domain and Process (2nd edition; American Occupational Therapy Association, 2008), we conducted an evidence-based review on simulator sickness (SS). METHOD. We searched Web of Science, PubMed, Safety Lit, Google Scholar, and recently published literature. We used the American Academy of Neurology’s classification criteria to extract data from 10 studies and assign each a level of 1-4, with “1” indicating the highest level of evidence. We grouped studies that addressed SS into client factors, context and environment factors, and activity demands. RESULTS. Client factors (i.e., older clients [> 70 yr; Level B], women [Level B]) and context/environment factors (e.g., refresh rates, scenario design and duration, simulator configuration, and calibration; Level B) probably increase the rates of SS, whereas activity demands (vection, speed of driving, and postural instability; Level C) possibly contribute to SS. CONCLUSION. We classified factors contributing to SS and identified the need for randomized trials to identify causes of SS.

Keywords: Automobile Driving, Computer Simulation, Driving, Environment, Google Scholar, History, Literature, Motion Sickness, Motion Sickness, Occupational, Older Drivers, Practice, Prediction, Proprioception, PUBMED, Review, Safety, Science, Somatosensory Disorders, Web of Science, Women

? Brown, T. (2011), Journal quality metrics: Options to consider other than Impact Factors. *American Journal of Occupational Therapy*, **65** (3), 346-350.

Full Text: [2011\Ame J Occ The65, 346.pdf](2011/Ame%20J%20Occ%20The65,%20346.pdf)

Abstract: Journal quality metrics (also referred to as bibliometrics), such as impact factors, are increasingly being used as a measure of researchers’ and educators’ success and prestige. Occupational therapists who submit articles to peer-reviewed journals may face a professional and research dilemma: Do they submit their articles to journals that largely have a professional audience and potentially do not have an impact factor, or do they opt not to publish their research material in occupational therapy oriented journals? Occupational therapy authors can consider other journal quality metric alternatives, in addition to the impact factor option, including the Eigenfactor Score, Article Influence Score, h-index, SCImago Journal Rank (SJR), Source Normalised Impact per Paper (SNIP), and discipline-specific generated journal quality measures. These other journal quality metrics can be important reference points for occupational therapists who publish and may encourage authors to publish in journals relevant to the discipline. This process, in turn, will build the occupational therapy body of knowledge as well as provide an essential, growing reference source for evidence-based practice.

Keywords: Bibliometrics, Journal Impact Factors, Occupational Therapy, Publications, Occupational-Therapy, h-Index, Citations

? Brown, T. (2011), Journal quality metrics: Options to consider other than Impact Factors. *American Journal of Occupational Therapy*, **65** (3), 346-350.

Full Text: [2011\Ame J Occ The65, 346.pdf](2011/Ame%20J%20Occ%20The65,%20346.pdf)

Abstract: Journal quality metrics (also referred to as bibliometrics), such as impact factors, are increasingly being used as a measure of researchers’ and educators’ success and prestige. Occupational therapists who submit articles to peer-reviewed journals may face a professional and research dilemma: Do they submit their articles to journals that largely have a professional audience and potentially do not have an impact factor, or do they opt not to publish their research material in occupational therapy oriented journals? Occupational therapy authors can consider other journal quality metric alternatives, in addition to the impact factor option, including the Eigenfactor Score, Article Influence Score, h-index, SCImago Journal Rank (SJR), Source Normalised Impact per Paper (SNIP), and discipline-specific generated journal quality measures. These other journal quality metrics can be important reference points for occupational therapists who publish and may encourage authors to publish in journals relevant to the discipline. This process, in turn, will build the occupational therapy body of knowledge as well as provide an essential, growing reference source for evidence-based practice.

Keywords: Bibliometrics, Journal Impact Factors, Occupational Therapy, Publications, Occupational-Therapy, h-Index, Citations

# Title: American Journal of Ophthalmology

Full Journal Title: [American Journal of Ophthalmology](http://www.sciencedirect.com/science/journal/00029394)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Buchan, J.C., Norris, J. and Kuper, H. (2005), Accuracy of referencing in the ophthalmic literature. *American Journal of Ophthalmology*, **140** (6), 1146-1148.

Full Text: [2005\Ame J Oph140, 1146.pdf](2005/Ame%20J%20Oph140,%201146.pdf)

Abstract: Purpose. To investigate the frequency of citation and quotation errors in the ophthalmic literature. Design. Analysis of 200 references from 100 papers published in 10 ophthalmic journals. Methods. A sample of 20 references was randomly selected from each of the 10 journals and each reference was checked for accuracy. Quotations were categorized as totally, partially, or not accurate. Results. There were 35 citation errors in 32 references, only four of which were errors in PubMed. Thirty quotations of references were not accurate; 20 were partially accurate. Conclusions. Citation and quotation errors are relatively common within the ophthalmic literature. This may be improved through technical editing.

? Schachat, A.P. (2007), Peers review, editors decide, and then, what? *American Journal of Ophthalmology*, **143** (4), 677-678.

Full Text: [2007\Ame J Oph143, 677.pdf](2007/Ame%20J%20Oph143,%20677.pdf)

Keywords: Review

? Liesegang, T.J., Shaikh, M. and Crook, J.E. (2007), The outcome of manuscripts submitted to the *American Journal of Ophthalmology* between 2002 and 2003. *American Journal of Ophthalmology*, **143** (4), 551-560.

Full Text: [2007\Ame J Oph143, 551.pdf](2007/Ame%20J%20Oph143,%20551.pdf)

Abstract: center dot PURPOSE: To investigate the outcome of manuscripts submitted to the American Journal of Ophthalmology (AJO) between July 23, 2002 and December 31, 2003. center dot DESIGN: Observational series. center dot METHODS: Data were collected on all Full,Length Articles and Brief Reports submitted to the AJO. Data were recorded for rejected or withdrawn manuscripts about the date of submission and decision, category of decision, type of article, manuscript region of origin, alternate journal of manuscript, date of publication, and impact factor and immediacy index of the subsequent journal. Corresponding data were collected from the manuscripts accepted over the same period. The Advanced PubMed online database was searched to determine if the rejected or withdrawn manuscripts were published elsewhere. The impact factor and the immediacy index of the journal of the subsequent journal was then recorded and compared with those of the AJO, using the year 2004 for comparison. center dot RESULTS: of 2,026 manuscripts submitted, 1,444 were rejected by the AJO or withdrawn by the authors and 50% of these were subsequently published elsewhere in a PubMed listed journal. The rejected or withdrawn articles were typically published in lower impact journals, most commonly in general ophthalmology journals in the author’s region or in subspecialty journals, although several were published in higher impact journals. The 727 articles were published in 94 different journals and usually with an extended delay. center dot CONCLUSIONS: Rejection of a manuscript by the AJO does not preclude publication, but rejected manuscripts are published more often in journals that serve a smaller readership and are cited less frequently, although exceptions exist.

Keywords: Comparison, Data, Database, Decision, Design, General, Immediacy Index, Impact, Impact Factor, Index, Journal, Journals, Methods, Origin, Outcome, Publication, Pubmed, Purpose

? Wilhelmus, K.R. (2007), Redundant publication of clinical trials on herpetic keratitis. *American Journal of Ophthalmology*, **144** (2), 222-226.

Full Text: [2007\Ame J Oph144, 222.pdf](2007/Ame%20J%20Oph144,%20222.pdf)

Abstract: PURPOSE: To examine reported clinical trials on herpes simplex virus epithelial keratitis as a case study for the configuration and possible motives of overlapping publications in the ophthalmic literature. DESIGN: Cross-sectional bibliometric survey. METHODS: One hundred and forty, four reports of 98 randomized clinical trials that formed the framework for a systematic review on dendritic and geographic keratitis were assembled by electronic and manual searching of biomedical journals and transactions, excluding meeting abstracts. Overlapping reports were identified by comparing methods and results. Main articles giving the most detailed results among overlapping reports were contrasted with trial reports without duplication. Annual citation rates since publication were estimated from the number of times each report was cited by subsequent scientific articles indexed in an online citation database. RESULTS: Sixty-one articles were published once, while 83 articles overlapped in 23 clusters, of which 14 (50%) lacked bibliographic cross, reference. of 55 secondary reports, 34 (62%) had a smaller sample size than their corresponding main report. Secondary articles were less likely to appear in an ophthalmological publication than main reports (P < .001) and were later cited less often (P =.01). Compared to trial reports published once, main articles with an overlapping report had a significantly higher citation rate (P =.04). CONCLUSION: Overlapping publications of therapeutic trials on herpetic keratitis often had undisclosed or fragmentary interconnections. Subsequent authors cited articles having an overlapping report more often than trials published once.

Keywords: Authors, Duplicate Publication, Editors, Journals, Misconduct, Publications, Responsibilities, Reviewers, Series, Statement

? Cauchi, P.A., Ang, G.S., Azuara-Blanco, A. and Burr, J.M. (2008), A systematic literature review of surgical interventions for limbal stem cell deficiency in humans. *American Journal of Ophthalmology*, **146** (2), 251-259.

Full Text: [2008\Ame J Oph146, 251.pdf](2008/Ame%20J%20Oph146,%20251.pdf)

Abstract: PURPOSE: To evaluate the relative benefits and to identify any adverse effects of surgical interventions for limbal stem cell deficiency (LSCD). DESIGN: Systematic literature review. METHODS: We searched the following electronic databases from January 1, 1989 through September 30, 2006: MEDLINE, EMBASE, Science citation index, BIOSIS, and the Cochrane Library. In addition, reference lists were scanned to identify any additional reports. The quality of published reports was assessed using standard methods. The main outcome measure was improvement in vision of at least two Snellen lines of best,corrected visual acuity (BCVA). Data on adverse outcomes also were collected. RESULTS: Twenty-six studies met the inclusion criteria. There were no randomized controlled studies. All 26 studies were either prospective or retrospective case series. For bilateral severe LSCD, keratolimbal allograft was the most common intervention with systemic immunosuppression. Other interventions included eccentric penetrating keratolimbal allografts and cultivated autologous oral mucosal epithelial grafts. An improvement in BCVA of two lines or more was reported in 31% to 67% of eyes. For unilateral severe LSCD, the most common surgical intervention was contralateral conjunctival limbal autograft, with 35% to 88% of eyes gaining an improvement in BCVA of two lines or more. The only study evaluating partial LSCD showed an improvement in BCVA of two lines or more in 39% of eyes. CONCLUSIONS: Studies to date have not provided strong evidence to guide clinical practice on which surgery is most beneficial to treat various types of LSCD. Standardized data collection in a multicenter LSCD register is suggested.

Keywords: Amniotic Membrane Transplantation, Autograft Transplantation, Burns, Case Series, Chronic Phases, Citation, Conjunctival, Corneal Surface, Criteria, Data Collection, Databases, Design, Intervention, Keratolimbal Allograft, Literature, Literature Review, Medline, Methods, Ocular-Surface Disorders, Outcomes, Penetrating Keratoplasty, Reconstruction, Review, Science, Science Citation Index, Surgery, Systematic Literature Review

# Title: American Journal of Orthodontics and Dentofacial Orthopedics

Full Journal Title: [American Journal of Orthodontics and Dentofacial Orthopedics](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6689&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=f7bc1d7220cf6bfc84e79540b4be4254)

ISO Abbreviated Title: Am. J. Orthod. Dentofac. Orthop.

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Publisher: Mosby, Inc

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Subject Categories:

Dentistry, Oral Surgery & Medicine: Impact Factor 0.732 / (2002)

? Hunt, O.T., Johnston, C.D., Hepper, P.G. and Burden, D.J. (2001), The psychosocial impact of orthognathic surgery: A systematic review. *American Journal of Orthodontics and Dentofacial Orthopedics*, **120** (5), 490-496.

Full Text: [2001\Ame J Ort Den Ort120, 490.pdf](2001/Ame%20J%20Ort%20Den%20Ort120,%20490.pdf)

Abstract: The aim of this study was to review the reported psychosocial benefits of orthognathic surgery. A systematic review of the literature was conducted using MEDLINE (1966 to December 2000), Web of Science (1981 to December 2000), and reference sections of identified articles. We also hand searched key orthodontic, oral surgery, and psychology journals. No language limitations were imposed. Randomized controlled trials, other controlled clinical trials, prospective studies (with or without controls), and retrospective studies (with or without controls) were considered for inclusion. Two reviewers extracted the data and independently assessed the quality of the studies. In all, 29 studies, including a number of prospective and retrospective studies, were identified as relevant. The results of the review indicated that orthognathic patients experience psychosocial benefits as a result of orthognathic surgery, including improved self-confidence, body and facial image, and social adjustment. However, there were wide variations in the study designs and a lack of uniformity in measuring the psychosocial constructs. This made it difficult to quantify the extent and the duration of the psychosocial benefits.

Keywords: Clinical Trials, Controlled Clinical Trials, Dimensions, Expectations, Follow-up, Impact, Journals, Literature, Medline, Motivation, Prospective Studies, Psychological-Factors, Psychosocial, Randomized Controlled Trials, Review, Satisfaction, Science, Social, Surgery, Systematic, Systematic Review, Web of Science

Mavropoulos, A. and Kiliaridis, S. (2003), Orthodontic literature: An overview of the last 2 decades. *American Journal of Orthodontics and Dentofacial Orthopedics*, **124** (1), 30-40.

Full Text: [2003\Ame J Ort Den Ort124, 30.pdf](2003/Ame%20J%20Ort%20Den%20Ort124,%2030.pdf)

Abstract: The aim of this study was to explore the orthodontic literature in the most important orthodontic and other dental and medical journals from 1981 to 2000. The most commonly used medical bibliographic database, MEDLINE, was used. In addition, some journals were hand searched to estimate the error of the method. Despite some indexing inconsistencies, MEDLINE was found to be a powerful and relatively accurate tool for use in bibliometric studies. About 16,000 articles with orthodontic interest were published during this period. The number of orthodontic articles written in English rose during this period, but almost half of them (45%) were published in nonorthodontic journals. Articles in the orthodontic journals are focusing more and more on diagnosis and treatment evaluation as the need for high-quality evidence becomes obvious, while other topics, such as new techniques and new materials, are losing ground. Many high-quality studies with orthodontic interest are published in nonorthodontic journals with a high Impact Factor, remaining more or less out of reach for most orthodontists.

Keywords: Areas, Benchmarking, Bibliographic Database, Bibliometric, Bibliometric Studies, Controlled Trials, Database, Diagnosis, Evaluation, Impact, Indexing, Journals, Literature, Medical, Medical Journals, Medline, Treatment

? Ng, J., Major, P.W., Heo, G. and Flores-Mir, C. (2005), True incisor intrusion attained during orthodontic treatment: A systematic review and meta-analysis. *American Journal of Orthodontics and Dentofacial Orthopedics*, **128** (2), 212-219.

Full Text: [2005\Ame J Ort Den Ort128, 212.pdf](2005/Ame%20J%20Ort%20Den%20Ort128,%20212.pdf)

Abstract: Introduction: The purpose of this meta-analysis was to quantify the amount of true incisor intrusion attained during orthodontic treatment. Methods: Electronic databases (PubMed, Medline, Medline In-Process & Other Non-Indexed Citations, all EBM reviews [Cochrane Database of Systematic Reviews, ASP Journal Club, DARE, and CCTR], Embase, Web of Science, and Lilacs) were searched with the help of a senior health sciences librarian. The goal was to identify clinical trials that assessed true incisor intrusion through cephalometric analysis and factored out craniofacial growth when required. From the selected abstracts, original articles were retrieved, and their references were hand searched for missing articles. Results: Twenty-eight articles met the initial inclusion criteria, but 24 were rejected because they did not quantify true incisor intrusion or factor out normal growth impact when required. The remaining 4 articles showed that true incisor intrusion is attainable (0.26 to 1.88 mm for the maxillary incisors and -0.19 to 2.84 mm for the mandibular incisors) but with large variability depending on the appliance used. A meta-analysis with results from the 2 articles that used the segmental technique was completed. The combined mean estimates of intrusion and 95% CI were 1.46 mm (1.05-1.86 mm) for the maxillary incisors and 1.90 mm (1.22-2.57 mm) for the mandibular incisors. Conclusions: True incisor intrusion is achievable in both arches, but the clinical significance of the magnitude of true intrusion as the sole treatment option is questionable for patients with severe deepbite. In nongrowing patients, the segmented arch technique can produce 1.5 mm of incisor intrusion in the maxillary arch and 1.9 mm in the mandibular arch.

Keywords: Adult Patients, Analysis, Appliance, Arch Leveling Techniques, Citations, Class-II Malocclusion, Clinical Trials, Databases, Force Systems, Health Sciences, Impact, Jasper Jumper, Journal, Meta-Analysis, Methods, Normal, Overbite, Pubmed, Retraction, Review, Root Resorption, Science, Sciences, Systematic, Systematic Review, Tooth Movements, Treatment, Variability, Web of Science

? Kanavakis, G., Spinos, P., Polychronopoulou, A., Eliades, T., Papadopoulos, M.A. and Athanasiou, A.E. (2006), Orthodontic journals with impact factors in perspective: Trends in the types of articles and authorship characteristics. *American Journal of Orthodontics and Dentofacial Orthopedics*, **130** (4), 516-522.

Full Text: [2006\Ame J Ort Den Ort130, 516.pdf](2006/Ame%20J%20Ort%20Den%20Ort130,%20516.pdf)

Abstract: Introduction: The purposes of this study were to analyze the types of articles and their authorship characteristics in the 3 orthodontic journals with impact factors-American Journal of Orthodontics and Dentofacial Orthopedics (AJODO), Angle Orthodontist (AO), and European Journal of Orthodontics (EJO) during 2 intervals of 5 years each (1993-1997 and 1998-2002) and to assess the changes in their contents during these periods. Methods: The results of 3004 article entries were analyzed with the Pearson chi-square test, and the examination of the variability of the parameters studied among journals and across the 2 time intervals was performed at the 0.05 level of significance. Results and Conclusions: Significant differences were found between the journals with respect to the research component of articles (higher in the EJO) and case reports (higher in the AJODO and the AO). For each journal, differences were also identified between the 2 time intervals, with multi-authored papers and multiple affiliations appearing more frequently in the second interval. The contributions of articles from the United States and Canada to the AJODO and the AO were statistically higher than to the EJO. A similar trend was found for articles from Europe, which comprise more than 70% of the content of the EJO. An increased contribution of articles from East Asia and Oceania was noted in the second time interval, which reached almost 100% of the previous time frame. The potential sources of variation in the studied parameters are discussed.

Keywords: Asia, Authorship, Canada, Case Reports, Changes, Characteristics, Chi-Square, Europe, Examination, Impact, Impact Factors, Interval, Intervals, Journal, Journals, Papers, Potential, Research, Significance, Sources, Trend, United States, Variability

? Major, M.P., Flores-Mir, C. and Major, P.W. (2006), Assessment of lateral cephalometric diagnosis of adenoid hypertrophy and posterior upper airway obstruction: A systematic review. *American Journal of Orthodontics and Dentofacial Orthopedics*, **130** (6), 700-708.

Full Text: [2006\Ame J Ort Den Ort130, 700.pdf](2006/Ame%20J%20Ort%20Den%20Ort130,%20700.pdf)

Abstract: Introduction: Our objective was to evaluate the capability of lateral cephalograms in diagnosing hypertrophied adenoids and obstructed posterior nasopharyngeal airways. Methods: A systematic review of the literature by using several electronic databases (Cochrane Library, Medline, Medline in progress, PubMed, Web of Science, Embase, and Lilacs) was performed with the help of a senior health-sciences librarian. The electronic search was followed up with hand searches. After applying our inclusion-exclusion criteria, the search yielded 11 articles that were then scored based on their methodological validity. Results: Lateral cephalograms performed reasonably well in evaluating adenoid size; both quantitative measures of adenoid area and subjective grading of adenoid size on lateral cephalograms had reasonable correlations to actual adenoid size (range of r, 0.60 to 0.88). However, evidence suggested that cephalograms were less ideal for evaluating the size of the posterior nasopharyngeal airway. The diagnostic difference is likely because the adenoid is a simpler 3-dimensional structure than the nasopharynx; therefore, it loses less information when compressed into 2 dimensions by the radiograph. Conclusions: Being used as a screening tool to determine the need for more rigorous ENT follow-up appears to be the greatest utility of lateral cephalograms. Because no consensus could be reached on what are the most useful landmarks, we recommend that clinicians look for multiple deviant measures of adenoid size rather than one definitive quantification.

Keywords: Airway, Assessment, Children, Clinical-Trials, Cochrane, Craniofacial Morphology, Databases, Diagnosis, Follow-up, Growth, Head Posture, Health Sciences, Information, Literature, Methods, Nasal, Nasopharyngeal Airway, Pubmed, Quantitative, Radiographic Evaluation, Radiological Assessment, Review, Science, Screening, Sleep-Apnea Syndrome, Systematic, Systematic Review, Validity, Web of Science

? Ng, J., Major, P.W. and Flores-Mir, C. (2006), True molar intrusion attained during orthodontic treatment: A systematic review. *American Journal of Orthodontics and Dentofacial Orthopedics*, **130** (6), 709-714.

Full Text: [2006\Ame J Ort Den Ort130, 709.pdf](2006/Ame%20J%20Ort%20Den%20Ort130,%20709.pdf)

Abstract: Introduction: The aim of this systematic review was to quantify the amount of true molar intrusion attainable during orthodontic treatment. Methods: A literature search was conducted to identify clinical trials that assessed true molar intrusion through superimposition of lateral cephalogram tracings. Craniofacial growth had to be factored out when appropriate. Electronic databases (Pubmed, Medline, Medline In-Process & Other Non-Indexed Citations, all EBM reviews, Embase, Web of Science, and Lilacs) were searched with the help of a senior health-sciences librarian. Abstracts that appeared to fulfill the initial selection criteria were selected, and the full-text original articles were then retrieved and analyzed. Only articles that fulfilled the final selection criteria were finally considered. Their references were also hand-searched for possible missing articles from the database searches. Results: Thirty abstracts met the initial inclusion criteria, and these articles were retrieved. From these, 29 were later rejected because they did not either quantify true molar intrusion or factor out normal craniofacial growth when required. Only 1 article remained, and it showed a mean maxillary molar intrusion of 0.96 mm (SD, 0.54) in 12 subjects. Conclusions: True molar intrusion appears to be achievable in the maxillary arch, although the amount of evidence is minimal. The clinical significance of the magnitude of the true intrusion reported is questionable as the sole treatment option to correct open-bite malocclusions. Better quantification method of the true intrusion attained has to be utilized.

Keywords: 2nd Molars, Anterior Open Bites, Cephalometric Evaluation, Citations, Class-II, Clinical Trials, Databases, Deep Overbite Correction, Headgear, Health Sciences, Herbst Appliance, Jasper Jumper, Literature, Long-Term, Methods, Normal, Review, Science, Systematic, Systematic Review, Treatment, Vertical Control, Web of Science

? Bartzela, T., Tuerp, J.C., Motschall, E. and Maltha, J.C. (2009), Medication effects on the rate of orthodontic tooth movement: A systematic literature review. *American Journal of Orthodontics and Dentofacial Orthopedics*, **135** (1), 16-26.

Full Text: [2009\Ame J Ort Den Ort135, 16.pdf](2009/Ame%20J%20Ort%20Den%20Ort135,%2016.pdf)

Abstract: Introduction: Recently, several reviews have been published on the effects of medications on bone physiology and the clinical side effects in orthodontics. However, the effects of medications on the rate of orthodontic tooth movement have not been evaluated. Methods: A systematic literature review on the effects of medications and dietary supplements on the rate of experimental tooth movement was performed by using PubMed (1953-Oct 2007), Web of Science, and Biosis, complemented by a hand search. Results: Forty-nine articles were included in the review, but their interpretation was hindered by the variability in experimental design, magnitude of force applied during tooth movement, and medication regimens. Therapeutic administration of eicosanoids resulted in increased tooth movement, whereas their blocking led to a decrease. Nonsteroidal anti-inflammatory drugs (NSAIDs) decreased tooth movement, but non-NSAID analgesics, such as paracetamol (acetaminophen), had no effect. Corticosteroid hormones, parathyroid hormone, and thyroxin have all been shown to increase tooth movement. Estrogens probably reduce tooth movement, although no direct evidence is available. Vitamin D3 stimulates tooth movement, and dietary calcium seemed to reduce it. Bisphosphonates had a strong inhibitory effect. Conclusions: Medications might have an important influence on the rate of tooth movement, and information on their consumption is essential to adequately discuss treatment planning with patients. (Am J Orthod Dentofacial Orthop 2009; 135:16-26).

Keywords: Acetaminophen, Acetylsalicylic-Acid, Bone, Bone Turnover, Calcium, Cyclooxygenase-2, Indomethacin, Information, Inhibition, Interpretation, Literature, Literature Review, Local Use, Medication, Methods, Movement, Prostaglandin E-2, Pubmed, Review, Root Resorption, Science, Systematic, Systematic Literature Review, Treatment, Variability, Vitamin-D, Web of Science

? Chen, Y., Kyung, H.M., Zhao, W.T. and Yu, W.J. (2009), Critical factors for the success of orthodontic mini-implants: A systematic review. *American Journal of Orthodontics and Dentofacial Orthopedics*, **135** (3), 284-291.

Full Text: [2009\Ame J Ort Den Ort135, 284.pdf](2009/Ame%20J%20Ort%20Den%20Ort135,%20284.pdf)

Abstract: Introduction: This systematic review was undertaken to discuss factors that affect mini-implants as direct and indirect orthodontic anchorage. Methods: The data were collected from electronic databases (Medline [Entrez PubMed], Embase, Web of Science, Cochrane Library, and All Evidence Based Medicine Reviews). Randomized clinical trials, prospective and retrospective clinical studies, and clinical trials concerning the properties, affective factors, and requirements of mini-implants were considered. The titles and abstracts that appeared to fulfill the initial selection criteria were collected by consensus, and the original articles were retrieved and evaluated with a methodologic checklist. A hand search of key orthodontic journals was performed to identify recent unindexed literature. Results: The search strategy resulted in 596 articles. By screening titles and abstracts, 126 articles were identified. After the exclusion criteria were applied, 16 articles remained. The analyzed results of the literature were divided into 2 topics: placement-related and loading-related factors. Conclusions: Mini-implants are effective as anchorage, and their success depends on proper initial mechanical stability and loading quality and quantity. (Am J Orthod Dentofacial Orthop 2009;135:284-91).

Keywords: Anchorage, Clinical Trials, Cochrane, Critical, Databases, Journals, Literature, Methods, Microimplants, Review, Science, Screening, Stability, Strategy, Success, Systematic, Systematic Review, Titanium Screws, Topics, Web of Science

# Title: American Journal of Pharmaceutical Education

Full Journal Title: American Journal of Pharmaceutical Education

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0002-9459

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Dorr, H.A. and Sher, I.H. (1968), Science Citation Index System and Pharmaceutical Education. *American Journal of Pharmaceutical Education*, **32** (2), 177-??.

Keywords: Citation, Science Citation Index

? Assemi, M., Corelli, R.L. and Ambrose, P.J. (2011), Development needs of volunteer pharmacy practice preceptors. *American Journal of Pharmaceutical Education*, **75** (1), Article Number: 10.

Full Text: [2011\Ame J Pha Edu75, 10.pdf](2011/Ame%20J%20Pha%20Edu75,%2010.pdf)

Abstract: Objective. To determine the training needs and interests of volunteer pharmacy preceptors. Methods. Volunteer preceptors (n5576) were surveyed on various aspects of precepting and their needs related to additional training. Results. Two hundred thirty-six preceptors (40.9%) responded. Preceptors were less confident about enforcing attendance policies, identifying and managing unmotivated or failing students, identifying dishonesty or plagiarism, and handling conflict. While only 29.5% of respondents agreed that having an APPE student decreased their overall workload, approximately half (48.1%) indicated that student pharmacists helped them complete their daily tasks and 67.8% agreed that APPE students extended patient care. Respondents who had received training were significantly more confident than preceptors who had not received training in their abilities to clarify expectations, evaluate a student’s knowledge, and foster skills related to critical thinking and problem solving. Conclusions. Training programs for pharmacy preceptors are effective; however, important areas in which additional training is needed or desired were identified among both new and experienced preceptors.

Keywords: Advanced Pharmacy Practice Experience, Clerkship Students, Clinical Interventions, Continuing Education, Faculty Development, Plagiarism, Preceptors

# Title: American Journal of Physics

Full Journal Title: American Journal of Physics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0002-9505

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Park, D. (1966), Garfield, E - Science Citation Index 1964. *American Journal of Physics*, **34** (10), 993-994.

Full Text: [1960-80\Ame J Phy34, 993.pdf](1960-80/Ame%20J%20Phy34,%20993.pdf)

Keywords: Citation, Science Citation Index

? Park, D. (1969), Science Citation Index, A second look. *American Journal of Physics*, **37** (11), 1162.

Full Text: [1960-80\Ame J Phy37, 1162.pdf](1960-80/Ame%20J%20Phy37,%201162.pdf)

Keywords: Citation, Science Citation Index

# Title: American Journal of Physiology

Full Journal Title: American Journal of Physiology

ISO Abbreviated Title: Am. J. Physiol.

JCR Abbreviated Title: Am J Physiol

ISSN: 0002-9513

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Amer Physiological Soc

Publisher Address:

Subject Categories:

: Impact Factor

? Malecot, C., Coraboeuf, E. and Coulombe, A. (1984), Automaticity of ventricular fibers induced by low concentrations of barium. *American Journal of Physiology*, **247** (3), H429-H439.

? Delmar, M. and Jalife, J. (1987), Low Ba-induced pacemaker current in well-polarized cat papillary-muscle. *American Journal of Physiology*, **252** (2), H258-H268.

# Title: American Journal of Physiology-Regulatory Integrative and Comparative Physiology

Full Journal Title: American Journal of Physiology-Regulatory Integrative and Comparative Physiology

ISO Abbreviated Title: Am. J. Physiol.-Regul. Integr. Comp. Physiol.

JCR Abbreviated Title: Am J Physiol-Reg I

ISSN: 0363-6119

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Physiological Soc

Publisher Address: 9650 Rockville Pike, Bethesda, MD 20814

Subject Categories:

Physiology: Impact Factor 2.437, / (2001)

? Yang, Y. and Gordon, C.J. (1997), Regulated hypothermia in the hypothyroid rat induced by administration of propylthiouracil. *American Journal of Physiology-Regulatory Integrative and Comparative Physiology*, **272** (5), R1390-R1395.

Abstract: Propylthiouracil (PTU), an antithyroidal drug that reduces serum L-thyroxine (T4) and 3,5,3’-triiodothyronine (T3), is presumed to lower core temperature (T0) by impairing metabolic thermogenesis. However, it is not understood why PTU-treated animals cannot use behavioral and other thermoeffectors to maintain normal Tc. Male rats were administered PTU in drinking water (0.05 mg/ml) while the following parameters were measured: 1) Tc and motor activity (MA) recorded by radiotelemetry for 24 h at ambient temperatures (Ta) of 10-30 degrees, C., 2) selected Ta, MA, and Tc in a temperature gradient; and 3) Tc, MA, and grooming behavior during exposure to heat stress (TH = 34.5°C) for 2 h. PTU reduced serum levels of T4, and T3 by 95 and 60%, respectively. Tc decreased after 3 days of PTU treatment; a 0.5°C decrease in Tc persisted throughout the PTU treatment. PTU rats exposed to Ta of 10-30°C maintained a consistent hypothermic Tc during the light phase; however, a deficit in the stability of Tc at night was noted during exposure to 10°C. In the temperature gradient, PTU rats selected warmer Ta, but their Tc was maintained at the same hypothermic levels as observed at fixed Ta values of 15-30°C. Heat stress caused Tc of control rats to increase to 39°C, whereas Tc of the PTU rats was maintained below 38°C. The regulation of Tc at hypothermic levels over a wide range of Ta values and when rats were housed in a temperature gradient indicates that chronic PTU induces a state of regulated hypothermia.

Keywords: Behavioral Thermoregulation, Thyroid, Telemetry, Temperature Gradient, Motor Activity, Core Temperature, Ambient Temperature, L-Thyroxine, 3,5,3’-Triiodothyronine, Body-Temperature, Hormone, Brain

# Title: American Journal of Preventive Medicine

Full Journal Title: [American Journal of Preventive Medicine](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6075&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=fb5fbbbf00ddfe0338c88d81617ea617)

ISO Abbreviated Title: Am. J. Prev. Med.

JCR Abbreviated Title: Am J Prev Med

ISSN: 0749-3797

Issues/Year: 8

Journal Country/Territory: United States

Language: English

Publisher: Elsevier Science Inc

Publisher Address: 655 Avenue of the Americas, New York, NY 10010

Subject Categories:

Public, Environmental & Occupational Health: Impact Factor, 1.442, 38/85 (1999); Impact Factor, 2.064, 18/88 (2001)

Medicine, General & Internal: Impact Factor, 1.442,/(1999); Impact Factor, 2.064, 22/112 (2001)

Wright, J.S., Champagne, F., Dever, G.E.A. and Clark, F.C. (1985), A comparative analysis of rural and urban mortality in Georgia, 1979. *American Journal of Preventive Medicine*, **1** (1), 22-29.

? Suen, J., Christenson, G.M., Cooper, A. and Taylor, M. (1995), Analysis of the current status of public health practice in local health departments. *American Journal of Preventive Medicine*, **11** (6), 51-54.

Abstract: This article describes the performance by local health departments of core public health functions. A post hoc analysis based on these essential functions was implemented using the 1994 dataset from a cooperative project with the Centers for Disease Control and Prevention (CDC) and National Association of County and City Health Officials, which involved a survey of the nation’s 2,888 local health departments. Applying guidelines for each functional area drafted by the Office of Disease Prevention and Health Promotion/Office of the Assistant Secretary for Health, CDC, and the Public Health Foundation in conjunction with the health officers in five states, a score was created for each core public health function: (1) health-related data collection, surveillance, and outcomes monitoring, (2) protection of environment, housing, food, and water, (3) investigation and control of diseases and injuries, (4) public information and education, (5) accountability and quality assurance, (6) laboratory services, (7) training and education, and (8) leadership, policy development, and administration. The individual and summary scores provide a mechanism to measure and describe the 2, 079 local health departments’ performance of these core functions acid to examine their relationship to several characteristics and practices-planning, administrative units, annual total expenditures, and jurisdiction population size. This article shows that the core performance index is highest for the data function and for local health departments serving a population of 50,000 or more people. In addition, the performance index increases as budget increases and is greater for all eight functions in those local health departments using health planning models such as Assessment Protocol for Excellence in Public Health (APEX PH), Planned Approach to Community Health (PATCH), Healthy People 2000, or Healthy Communities 2000. These results may be used to facilitate cooperation between local, state, and federal health agencies and the communities they serve; strengthen the core functions at the local, state, and federal levels; and improve public health practice.

? (1995), Measuring state expenditures for core public health functions. *American Journal of Preventive Medicine*, **11** (6), 58-73.

Abstract: 1993, the U.S. Public Health Service, with the assistance of the Public Health Foundation (PHF), launched a pilot study to develop state and national expenditure estimates for the core functions of public health. The core public health functions selected for the data collection effort were (1) health-related data, surveillance, and outcomes monitoring; (2) investigation and control of diseases, injuries, and response to natural disasters; (3) immunizations, family planning, and STD and TB clinical services; (4) protection of environment, housing, food, water, and the workplace; (5) laboratory services; (6) public information and education and community mobilization; (7) targeted outreach and linkage to personal services; (8) accountability/ quality assurance; (9) training and education; and (10) leadership, planning, policy development, and administration. State health officials from Connecticut, Iowa, Missouri, Oregon, and Rhode Island helped develop a methodology and a set of guidelines for estimating expenditures on core functions and used this methodology to report expenditure data. Three additional states-Illinois, New York, and Texas-joined in a second phase of the pilot study, one that included collecting data on personal health services and total agency expenditure data. The eight states’ combined per capita core function expenditures were $44 in fiscal year (FY) 1993. This included expenditures by state and local public health agencies and state substance abuse, mental health, and environmental health agencies. Expenditures for core public health functions accounted for 27% of these agencies’ total expenditures. The largest core function expenditure accounting for approximately 30% of the total was for the protection of environment, housing, food, water, and the workplace. Extrapolating the eight states’ expenditure estimates to the national level, spending for core public health functions in FY 1993 totaled $11.4 billion, or 1.3% of total U.S. health spending. The pilot project demonstrates that with appropriate guidance, including an estimating methodology and uniform definitions, categorical program data can be reported by function. The results of the data collection effort also demonstrate the potential utility of examining expenditures by core functions for state planning and policy making. The methodology allows states to distinguish core functions from other responsibilities, providing states with quantified information useful for reform efforts.

Le Mier, M., Cummings, P., Keck, D., Stehr-Green, J., Ikeda, R. and Saltzman, L. (1998), Washington State gunshot-wound surveillance system. *American Journal of Preventive Medicine*, **15** (3S), 92-100.

Full Text: [A\Ame J Pre Med15, 92.pdf](A/Ame%20J%20Pre%20Med15,%2092.pdf)

Abstract: Context: Gunshot is the second leading mechanism of injury death in Washington State, but data on nonfatal gun-related injuries are limited.

Objective: Develop and evaluate a system for surveillance of fatal and nonfatal gunshot injuries.

Design: A gunshot wound surveillance system was pilot-tested. Reports from emergency departments were compared with emergency department logs and reports from medical examiners and coroners were compared with death certificates.

Setting: Six Washington counties, with 57% of the state’s population.

Participants: Hospital emergency departments, coroners, medical examiners, and local law enforcement agencies.

Main Outcome Measures: Surveillance system simplicity, acceptability, sensitivity, and predictive value positive.

Results: The pilot system was found to be simple and acceptable to data providers. The predictive value positive was 99% for reports from hospital emergency departments and 100% for reports from medical examiners and coroners. The sensitivity of hospital emergency department reporting was 76%; the sensitivity of reporting by medical examiners and coroners was 81%,

Conclusions: States interested in developing gunshot-wound surveillance systems should: (1) verify the existence of a statewide-gunshot-wound reporting requirement, (2) consider establishing such a requirement if one does not exist, (3) include hospital emergency departments as a data source, (4) establish the capacity to link records if multiple data sources are used, (5) limit the data reporting requirements to fit on a one-page form, preferably one-side only, (6) periodically review the data and the reporting practices of data providers, and be prepared to make changes if things are not working as planned, and (7) disseminate surveillance data and system evaluation findings on a regular basis.

Keywords: Injury, Firearm, Weapon, Surveillance, Injury-Surveillance, Emergency

? Harris, R.P., Helfand, M., Woolf, S.H., Lohr, K.N., Mulrow, C.D., Teutsch, S.M., Atkins, D. and Methods Work Grp Third US Preventi (2001), Current methods of the US Preventive Services Task Force - A review of the process. *American Journal of Preventive Medicine*, **20** (3S), 21-35.

Full Text: [2001\Ame J Pre Med20, 21.pdf](2001/Ame%20J%20Pre%20Med20,%2021.pdf)

Abstract: The U.S. Preventive Services Task Force (USPSTF/Task Force) represents one of several efforts to take a more evidence-based approach to the development of clinical practice guidelines. As methods have matured for assembling and reviewing evidence and for translating evidence into guidelines, so too have the methods of the USPSTF. This paper summarizes the current methods of the third USPSTF, supported by the Agency for Healthcare Research and Quality (AHRQ) and two of the AHRQ Evidence-based Practice Centers (EPCs). The Task Force limits the topics it reviews to those conditions that cause a large burden of suffering to society and that also have available a potentially effective preventive service. It focuses its reviews on the questions and evidence most critical to making a recommendation. It uses analytic frameworks to specify the linkages and key questions connecting the preventive service with health outcomes. These linkages, together with explicit inclusion criteria, guide the literature searches for admissible evidence. Once assembled, admissible evidence is reviewed at three strata: (1) the individual study, (2) the body of evidence concerning a single linkage in the analytic framework, and (3) the body of evidence concerning the entire preventive sen ice. For each stratum, the Task Force uses explicit criteria as general guidelines to assign one of three grades of evidence: good, fair, or poor. Good or fair quality evidence for the entire preventive service must include studies of sufficient design and quality to provide an unbroken chain of evidence-supported linkages, generalizable to the general primary care population, that connect the preventive service with health outcomes. Poor evidence contains a formidable break in the evidence chain such that the connection between the preventive service and health outcomes is uncertain. For services supported by overall good or fair evidence, the Task Force uses outcomes tables to help categorize the magnitude of benefits, harms, and net benefit fi-om implementation of the preventive service into one of four categories: substantial, moderate, small, or zero/negative. The Task Force uses its assessment of the evidence and magnitude of net benefit to make a recommendation, coded as a letter: from A (strongly recommended) to D (recommend against). It gives an I recommendation in situations in which the evidence is insufficient to determine net benefit. The third Task Force and the EPCs will continue to examine a variety of methodologic issues and document work group progress in future communications.

Keywords: MEDLINE, Preventive Health Services, Evidence-Based Medicines, Methods, Practice Guidelines, Clinical-Practice Guidelines, Evidence-Based Medicine, Users Guides, Article

Phillips, K.A. and Chen, J.L. (2002), Impact of the US panel on cost-effectiveness in health and medicine. *American Journal of Preventive Medicine*, **22** (2), 98-105.

Full Text: [2002\Ame J Pre Med22, 98.pdf](2002/Ame%20J%20Pre%20Med22,%2098.pdf)

Abstract: Objective: To examine whether recommendations made by the U.S. Panel on Cost-Effectiveness in Health and Medicine (Panel Report) have been associated with changes in how cost-effectiveness analyses are conducted.

Methods: We examined Whether Studies published after the Panel Report was issued and which cited the Panel Report were more likely to follow its recommendations oil discounting, quality-adjusted life years (QALYs), and incremental ratios than (1) Studies published before the Panel Report, and (2) studies published after the Panel Report but that did not cite the Panel Report. We used the Science Citation Index to identify all studies Citing the Panel Report that were also empirical, cost-effectiveness analyses (n = 18). We randomly selected two groups for comparison (N = 54). Studies Were Compared rising contingency tables.

Results: Significantly more studies that cited the Panel Report used a 3% discount rate than did post-report comparison studies (p = 0.03) and pre-report comparison studies (p = 0.03). There was a nonsignificant trend for studies citing the Panel Report to be more likely to use QALYs and incremental ratios (range of p = 0.11 to p = 0.20).

Conclusions: We found evidence that the Panel Report had an impact oil practice. However, 31% of the studies citing the Panel Report did not follow the recommendation to use a 3% discount rate, and only 28% followed all three recommendations.

Keywords: Costs and Cost Analysis, Cost-Benefit Analysis, Nonvalvular Atrial-Fibrillation, Total Hip-Replacement, Deep-Vein Thrombosis, Utility Analyses, Benefit-Analysis, Contingent Valuation, Economic-Evaluation, Infected Persons, Cystic-Fibrosis, Prevention

? Silver Wallace, L. and Leenders, N. (2004), Content analysis of prime-time television coverage of physical activity, 1970-2001. *American Journal of Preventive Medicine*, **26** (2), 130-134.

Full Text: [2004\Ame J Pre Med26, 130.pdf](2004/Ame%20J%20Pre%20Med26,%20130.pdf)

Abstract: BACKGROUND: The purpose of this study was to examine how major nightly television networks reported on the health benefits of physical activity. METHODS: A retrospective content analysis of physical activity coverage on four major nightly television networks from 1970 to 2001 was performed. The Vanderbilt Television News Archives were searched for keywords “physical activity,” “physical fitness,” and “exercise.” RESULTS: During the 31-year time period, 111 non-overlapping reports aired on all networks combined. The link between physical activity and health was reported in 53 (47.7%) articles, with general health (n =16, 14.4%) and heart disease (n =12, 12.6%) cited most frequently. Just three broadcasts related to the Surgeon’s General Report on Physical Activity and Health were aired following its publication in 1996. CONCLUSIONS: Although the protective health benefits of physical activity are well established, physical activity received a modest amount of television coverage from 1970 through 2001.

Keywords: Analysis, Background, Content Analysis, Coverage, General, Health, Heart, Methods, Networks, Physical, Physical Activity, Publication, Purpose

? Franks, A.L., Simoes, E.J., Singh, R. and Gray, B.S. (2002), Assessing prevention research impact: A bibliometric analysis. *American Journal of Preventive Medicine*, **30** (3), 211-216.

Full Text: [2006\Ame J Pre Med30, 211.pdf](2006/Ame%20J%20Pre%20Med30,%20211.pdf)

Abstract: Background: This study was undertaken to explore a bibliometric approach to assessing the impact of selected prevention research center (PRC) peer-reviewed publications. Methods: The 25 eligible PRCs were asked to submit 15 papers that they considered the most important to be published in the decade 1994-2004. journal articles (n =227) were verified in 2004 and categorized: 73% were research reports, 10% discussion articles, 9% dissemination articles, and 7% review articles. Results: Only 189 articles (83%) were searchable via the Institute of Scientific Information (ISI), Web of Science databases for citation tracking in 2004. These 189 articles were published in 76 distinct journals and subsequently, cited 4628 times (range 0 to 1523) in 1013 journals. Articles published before 2001 were cited a median of 14 times each. Publishing journals had a median ISI impact factor of 2.6, and ISI half-life of 7.2. No suitable benchmarks were available for comparison. The PRC influence factor (number of PRCs that considered a journal highly influential) was only weakly correlated with the ISI impact factor and was not correlated with half-life. Conclusions: Conventional bibliometric analysis to assess the scientific impact of public health prevention research is feasible, but of limited utility because of omissions from ISI’s databases, and because citation benchmarks for prevention research have not been established: these problems can and should be addressed. Assessment of impact on public health practice, policy, or on the health of populations, will require more than a bibliometric approach.

Keywords: Bibliometric, Bibliometric Analysis, Citation, Citations, Databases, Impact, Impact Factor, Journal Articles, Journals, Papers, Public Health, Publications, Research, Science, Web of Science

? Kremers, S.P.J., de Bruijn, G.J., Droomers, M., van Lenthe, F. and Brug, J. (2007), Moderators of environmental intervention effects on diet and activity in youth. *American Journal of Preventive Medicine*, **32** (2), 163-172.

Full Text: [2007\Ame J Pre Med32, 163.pdf](2007/Ame%20J%20Pre%20Med32,%20163.pdf)

Abstract: Background: The complexity of the relationship between environmental factors on the one hand and dietary behavior and physical activity on the other necessitates the search for moderators of environmental influences. The current evidence base is reviewed regarding potential moderating factors in the effectiveness of environmental interventions aimed at diet and/or physical activity of children and adolescents. Methods: The following databases were used: (1) Medline, (2) PubMed, (3) PsychInfo, (4) Web of Science, and (5) ERIC. Additionally, all potentially relevant references in recent reviews were checked. Results: of the 41 studies included in the review, only seven studies (17%) were identified that reported tests of potential moderators of intervention effects. Gender proved to be the most frequently studied potential moderator. Additionally, race, age, and site have been studied regarding their potential role in modifying the effect of environmental interventions. Discussion: The small number of studies identified in this review prohibited us from attempting to formulate a conclusion on differential environment-behavior relationships in distinct subgroups. Rather than being an exception, it is argued that tests of effect modifiers should become common practice in behavioral nutrition and physical activity research to increase our understanding of mechanisms of behavior change and to optimize interventions.

Keywords: Adolescents, Cardiovascular Health, Childhood Obesity, Children, Databases, Effectiveness, Elementary-School-Children, Environmental, Gender, Intervention, Interventions, Methods, Multiple-Regression, Neighborhood Environment, Nutrition, Nutrition Education, Physical Activity, Practice, Pricing Strategy, Promote Physical-Activity, Pubmed, Race, Randomized Controlled-Trial, Research, Review, Science, Vegetable Consumption, Web of Science, Youth

? Vandelanotte, C., Spathonis, K.M., Eakin, E.G. and Owen, N. (2007), Website-delivered physical activity interventions: A review of the literature. *American Journal of Preventive Medicine*, **33** (1), 54-64.

Full Text: [2007\Ame J Pre Med33, 54.pdf](2007/Ame%20J%20Pre%20Med33,%2054.pdf)

Abstract: Background: Evidence-based physical activity interventions that can be delivered to large numbers of adults at an acceptable cost are a public health priority; website-delivered programs have this potential. The purpose of this study was to systematically review the research findings and outcomes of website-delivered physical activity interventions and to identify relationships of intervention attributes with behavioral outcomes. Methods: A structured search of PubMed, Medline, PsycInfo, and Web of Science was conducted for intervention studies published up to July 2006. Studies included in the review were those that (1) used websites or e-mail, (2) had physical activity behavior as an outcome measure, (3) had randomized controlled or quasi-experimental designs, (4) targeted adults, and (5) were published in English. Results: of the fifteen studies reviewed, improvement in physical activity was reported in eight. Better outcomes were identified when interventions had more than five contacts with participants and when the time to follow-up was short (<= 3 months; 60% positive outcomes), compared to medium-term (3-6 months, 50%) and long-term (> 6 months, 40%) follow-up. There were no clear associations of outcomes with other intervention attributes. Conclusions: A little over half of the controlled trials of website-delivered physical activity interventions have reported positive behavioral outcomes. However, intervention effects were short lived, and there was limited evidence of maintenance of physical activity changes. Research is needed to identify elements that can improve behavioral outcomes, the maintenance of change and the engagement and retention of participants; larger and more representative study samples are also needed.

Keywords: Activity Motivational Program, Adults, Behavior-Change, Computer, Follow-up, Health, Information-Technology, Internet Support, Intervention, Intervention Studies, Interventions, Literature, Methods, Outcome, Outcomes, Physical Activity, Preventive Medicine, Public Health, Pubmed, Randomized-Trial, Research, Review, Science, Tailored Interventions, Web of Science, Websites, Weight-Loss

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Full Text: [2009\Ame J Pre Med36, S34.pdf](2009/Ame%20J%20Pre%20Med36,%20S34.pdf)

Abstract: Background: The Robert Wood Johnson Foundation requested this utilization-focused evaluation of its Active Living Research (ALR) program. This evaluation reports on the trajectory of influence of past and future ALR outcomes on field-building and policy contributions as well as on possible users of completed and disseminated ALR products. Methods: In 2006 and 2007, key-informat interviews were conducted with 136 representatives of first-line potential users of ALR research products, including state physical activity and nutrition program coordinators, policymakers, scientists, and funders. Literature reviews, bibliometric analyses, and document reviews served to describe the context for ALR’s work and the ways it could enhance its utility for field building and policymaking. Results: The contributions of ALR to the emerging transdisciplinary field included leadership in the development of measurement tools, epidemiologic studies, implementation research, the translation of research to practice, and the communication of learned lessons to diverse audiences. ALR’s contributions to policy discussions were found across a spectrum of policy-development phases that included describing the problem, raising awareness of alternative strategies for increasing physical activity, convening nontraditional partners, and evaluating policy implementation. Conclusions: Policy-relevant research can make contributions to policymakers’ thinking but almost never causes a change by itself. Five years after the original authorization of ALR, there is ample evidence of its recognition as a resource by key players, its field-building influence, and its contributions to policy discussions. All these bear promise for a broader contribution to obesity prevention. Recommendations for increasing ALR’s impact on policy and practice are offered. (Am J Prev Med 2009;36(2S):S34-S43) (C) 2009 American journal of Preventive Medicine.

Keywords: Bibliometric, Development, Evaluation, Impact, Interventions, Measurement, Physical-Activity, Research, Translation

? Yen, I.H., Michael, Y.L. and Perdue, L. (2009), Neighborhood environment in studies of health of older adults: A systematic review. *American Journal of Preventive Medicine*, **37** (5), 455-463.

Full Text: [2009\Ame J Pre Med37, 455.pdf](2009/Ame%20J%20Pre%20Med37,%20455.pdf)

Abstract: Context: Epidemiologists and public health researchers are studying neighborhood’s effect on individual health. The health of older adults may be more influenced by their neighborhoods as a result of decreased mobility. However, research on neighborhood’s influence on older adults’ health, specifically, is limited.

Evidence acquisition: Recent studies on neighborhood and health for older adults were identified. Studies were identified through searches of databases including PsycINFO, CINAHL, PubMed, Academic Search Premier, Ageline, Social Science Citation Index, and Health Source. Criteria for inclusion were as follows: human studies; English language; study sample included adults aged >= 55 years; health outcomes, including mental health, health behaviors, morbidity, and mortality; neighborhood as the primary exposure variable of interest; empirical research; and studies that included >= 10 neighborhoods. Air pollution studies were excluded. Five hundred thirty-eight relevant articles were published during 19972007; a total of 33 of these articles met inclusion criteria.

Evidence synthesis: The measures of objective and perceived aspects of neighborhood were summarized. Neighborhood was primarily operationalized using census-defined boundaries. Measures of neighborhood were principally derived from objective sources of data; eight studies assessed perceived neighborhood alone or in combination with objective measures. Six categories of neighborhood characteristics were socioeconomic composition, racial composition, demographics, perceived resources and/or problems, physical environment, and social environment. The studies are primarily cross-sectional and use administrative data to characterize neighborhood.

Conclusions: These studies suggest that neighborhood environment is important for older adults’ health and functioning. (Am J Prev Med 2009;37(5):455-463) (C) 2009 American Journal of Preventive Medicine

Keywords: Coronary-Heart-Disease, Quality-of-Life, Self-Rated Health, Population-Based Cohort, Physical-Activity, Socioeconomic-Status, Built Environment, Depressive Symptoms, United-States, Multilevel Analysis

? Cohen, J.E., Chaiton, M.O. and Planinac, L.C. (2010), Taking stock a bibliometric analysis of the focus of tobacco research from the 1980s to the 2000s. *American Journal of Preventive Medicine*, **39** (4), 352-356.

Full Text: [2010\Ame J Pre Med39, 352.pdf](2010/Ame%20J%20Pre%20Med39,%20352.pdf)

Abstract: Background: Little is known about the body of tobacco research as a whole. Purpose: This paper examines the changes in literature focus (1980s to 2000s) and identifies areas in need of increased attention. Methods: Tobacco articles randomly selected from searches of the MEDLINE and Web of Science databases were coded according to (1) epidemiologic framework component; (2) study focus; and (3) form of tobacco. Frequencies, cross-tabulations, and tests of proportions were conducted. The analysis was conducted in 2009. Results: From the 1980s to the 2000s, there was a significant decrease in tobacco-related articles focusing on the “agent” and an increase in articles focusing on the “host.” Few articles in either decade focused on the “environment” or on the “vector” (<10%). The percentage of study foci addressing health effects decreased, whereas prevalence, use and cessation foci increased. Approximately two thirds of articles focused on the cigarette. Conclusions: The nature of tobacco research has shifted from examining the links between cigarettes and disease to understanding why people smoke and how to help them quit. Proportionately more research could focus on the environment and vector components of the epidemiologic framework, to expand strategies for reducing tobacco-related disease. (Am J Prev Med 2010;39(4):352-356) (C) 2010 American Journal of Preventive Medicine.

Keywords: Alcohol, Bibliometric, Databases, Drug, Environment, Journal, Literature, Medline, Model, Research, Science, Tobacco, Web of Science

? van Uffelen, J.G.Z., Wong, J., Chau, J.Y., van der Ploeg, H.P., Riphagen, I., Gilson, N.D., Burton, N.W., Healy, G.N., Thorp, A.A., Clark, B.K., Gardiner, P.A., Dunstan, D.W., Bauman, A., Owen, N. and Brown, W.J. (2010), Occupational sitting and health risks a systematic review. *American Journal of Preventive Medicine*, **39** (4), 379-388.

Full Text: [2010\Ame J Pre Med39, 379.pdf](2010/Ame%20J%20Pre%20Med39,%20379.pdf)

Abstract: Context: Emerging evidence suggests that sedentary behavior (i.e., time spent sitting) may be negatively associated with health. The aim of this study was to systematically review the evidence on associations between occupational sitting and health risks. Evidence acquisition: Studies were identified in March-April 2009 by literature searches in PubMed, PsycINFO, CENTRAL, CINAHL, EMBASE, and PEDro, with subsequent related-article searches in PubMed and citation searches in Web of Science. Identified studies were categorized by health outcome. Two independent reviewers assessed methodologic quality using a 15-item quality rating list (score range 0-15 points, higher score indicating better quality). Data on study design, study population, measures of occupational sitting, health risks, analyses, and results were extracted. Evidence synthesis: 43 papers met the inclusion criteria(21% cross-sectional, 14% case-control, 65% prospective); they examined the associations between occupational sitting and BMI (n = 12); cancer (n = 17); cardiovascular disease (CVD, n = 8); diabetes mellitus (DM, n = 4); and mortality (n = 6). The median study-quality score was 12 points. Half the cross-sectional studies showed a positive association between occupational sitting and BMI, but prospective studies failed to confirm a causal relationship. There was some case-control evidence for a positive association between occupational sitting and cancer; however, this was generally not supported by prospective studies. The majority of prospective studies found that occupational sitting was associated with a higher risk of DM and mortality. Conclusions: Limited evidence was found to support a positive relationship between occupational sitting and health risks. The heterogeneity of study designs, measures, and findings makes it difficult to draw definitive conclusions at this time. (Am J Prev Med 2010;39(4):379-388) (C) 2010 American Journal of Preventive Medicine.

Keywords: Acute Myocardial-Infarction, Aged Finnish Men, Bmi, Body-Mass Index, Breast-Cancer, Cancer, Cardiovascular, Cardiovascular Disease, Cardiovascular-Disease, Citation, Diabetes, Diabetes Mellitus, Disease, Embase, Health, Health Risks, Ischemic Heart-Disease, Journal, Leisure-Time, Literature, Mortality, Occupational, Outcome, Papers, Points, Prospective Studies, Pubmed, Renal-Cell Cancer, Review, Risk, Science, Sedentary Behaviors, Systematic, Systematic Review, Time Physical-Activity, Web of Science

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Full Text: [2011\Ame J Pre Med41, 207.pdf](2011/Ame%20J%20Pre%20Med41,%20207.pdf)

Abstract: Context: To systematically review and provide an informative synthesis of findings from longitudinal studies published since 1996 reporting on relationships between self-reported sedentary behavior and device-based measures of sedentary time with health-related outcomes in adults. Evidence acquisition: Studies published between 1996 and January 2011 were identified by examining existing literature reviews and by systematic searches in Web of Science, MEDLINE, PubMed, and PsycINFO. English-written articles were selected according to study design, targeted behavior, and health outcome. Evidence synthesis: Forty-eight articles met the inclusion criteria; of these, 46 incorporated self-reported measures including total sitting time; TV viewing time only; TV viewing time and other screen-time behaviors; and TV viewing time plus other sedentary behaviors. Findings indicate a consistent relationship of self-reported sedentary behavior with mortality and with weight gain from childhood to the adult years. However, findings were mixed for associations with disease incidence, weight gain during adulthood, and cardiometabolic risk. of the three studies that used device-based measures of sedentary time, one showed that markers of obesity predicted sedentary time, whereas in conclusive findings have been observed for markers of insulin resistance. Conclusions: There is a growing body of evidence that sedentary behavior may be a distinct risk factor, independent of physical activity, for multiple adverse health outcomes in adults. Prospective studies using device-based measures are required to provide a clearer understanding of the impact of sedentary time on health outcomes. (Am J Prev Med 2011;41(2):207-215) (C) 2011 American Journal of Preventive Medicine.

Keywords: Adult, Adults, Cardiovascular-Disease, Disease, Endometrial Cancer, Health, Health Outcomes, Impact, Insulin, Journal, Lipoprotein-Lipase Activity, Literature, Longitudinal Studies, Medline, Mortality, NIH-AARP Diet, Obesity, Outcome, Outcomes, Physical Activity, Population-Based Cohort, Prospective Studies, Pubmed, Recreational Physical-Activity, Resistance, Review, Risk, Science, Sitting Time, Systematic, Systematic Review, Television Viewing Time, Type-2 Diabetes-Mellitus, Web of Science, Weight-Gain

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Full Text: [2011\Ame J Pre Med41, 442.pdf](2011/Ame%20J%20Pre%20Med41,%20442.pdf)

Abstract: Context: Research examining the association between environmental attributes and physical activity among youth is growing. An updated review of literature is needed to summarize the current evidence base, and to inform policies and environmental interventions to promote active lifestyles among young people. Evidence acquisition: A literature search was conducted using the Active Living Research (ALR) literature database, an online database that codes study characteristics and results of published papers on built/social environment and physical activity/obesity/sedentary behavior. Papers in the ALR database were identified through PubMed, Web of Science, and SPORT Discus using systematically developed and expert-validated search protocols. For the current review, additional inclusion criteria were used to select observational, quantitative studies among youth aged 3-18 years. Evidence synthesis: Papers were categorized by design features, sample characteristics, and measurement mode. Relevant results were summarized, stratified by age (children or adolescents) and mode of measurement (objective or perceived) for environmental attributes and physical activity. Percentage of significant results was calculated. Conclusions: Mode of measurement greatly influenced the consistency of associations between environmental attributes and youth physical activity. For both children and adolescents, the most consistent associations involved objectively measured environmental attributes and reported physical activity. The most supported correlates for children were walkability, traffic speed/volume, access/proximity to recreation facilities, land-use mix, and residential density. The most supported correlates for adolescents were land-use mix and residential density. These findings support several recommendations for policy and environmental change from such groups as the IOM and National Physical Activity Plan. (Am J Prev Med 2011;41(4):442-455) (C) 2011 American Journal of Preventive Medicine.

Keywords: Adolescent Girls, Adolescents, Aged, Author, Behavior, Built Environment, Children, Correlates, Cross-Sectional Survey, Design, Elementary-School, Environment, Environmental, Interventions, Journal, Literature, Local Neighborhood, Measurement, Observational, Papers, Physical Activity, Policies, Policy, Pubmed, Quantitative, Recommendations, Recreational Facilities, Research, Residential, Review, School-Aged Children, Science, Socioeconomic-Status, Sport, Synthesis, Urban Form, US Children, USA, Web of Science, Youth

# Title: American Journal of Primatology

Full Journal Title: American Journal of Primatology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0275-2565

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Sarringhaus, L.A., McGrew, W.C. and Marchant, L.F. (2005), Misuse of anecdotes in primatology: Lessons from citation analysis. *American Journal of Primatology*, **65** (3), 283-288.

Full Text: [2005\Ame J Pri65, 283.pdf](2005/Ame%20J%20Pri65,%20283.pdf)

Abstract: This study analyzes the accuracy of anecdotes cited in behavioral primatology publications. Anecdotes (n = 1 cases) recounting tool use were sought in the four main primatological journals. Citations of anecdotes in the scientific literature that met three criteria were systematically coded for recognition and accuracy. The results showed that 60% of the time, authors who cited anecdotes did not explicitly acknowledge them as such. To a lesser extent, the citations exaggerated the frequency of anecdotal events or misrepresented their status. For tool use specifically, the actor was misreported more often than the tool or its target. Multiple citations were incorrect more often than single citations. Overall, it seems that citation of anecdotes is problematic and may have far-reaching implications in terms of misleading overgeneralizations. Primatologists should take care in citing singular or rare events. (c) 2005 Wiley-Liss, Inc.

Keywords: Citation Accuracy, Anecdote, Tool Use, Methodology, Chimpanzee, Capuchin Monkey, Tool-Set, Chimpanzees, Anthropomorphism, Predation, Capuchin

# Title: American Journal of Psychiatry

Full Journal Title: [American Journal of Psychiatry](http://global.umi.com/pqdweb?TS=0&JSEnabled=1&RQT=317&SK=2&ScQ=000028648&TS=1030081)

ISO Abbreviated Title: Am. J. Psychiat.

JCR Abbreviated Title: Am J Psychiat

ISSN: 0002-953X

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Psychiatric Press, Inc

Publisher Address: 1400 K ST, N W, Ste 1101, Washington, DC 20005

Subject Categories:

Psychiatry: Impact Factor

? Fishbein, M. (1952), Gobbledygook in Psychiatric Writing. *American Journal of Psychiatry*, **108** (9), 705.

Full Text: -1959\Ame J Psy108, 705.pdf

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Full Text: -1959\Ame J Psy118, 1069.pdf

Keywords: Trends

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Full Text: Ame J Psy137, 52.pdf

Cardeña, E. and Spiegel, D. (1993), Dissociative reactions to the San Francisco bay area earthquake of 1989. *American Journal of Psychiatry*, **150** (3), 474-478.

Full Text: [A\Ame J Psy150, 474.pdf](A/Ame%20J%20Psy150,%20474.pdf)

Abstract: OBJECTIVE: This study systematically evaluated the psychological reactions of a nonclinical population to the October 1989 earthquake in the San Francisco Bay Area.

METHOD: A representative group of about 100 graduate students from two different institutions in the Bay Area volunteered to participate in the study. Within 1 week of the earthquake, the authors administered a checklist of anxiety and dissociative symptoms to the subjects, and 4 months later they conducted a follow-up study with the same checklist.

RESULTS: The participants reported significantly greater numbers and frequency of dissociative symptoms, including derealization and depersonalization, distortions of time, and alterations in cognition, memory, and somatic sensations, during or shortly after the earthquake than after 4 months. To a lesser degree they also reported significantly more nonsomatic anxiety symptoms and Schneider’s first-rank symptoms at the earlier testing time.

CONCLUSIONS: These results suggest that among nonclinical populations, extreme distress may significantly increase the prevalence and severity of transient dissociative phenomena and anxiety. They provide further evidence of the role that dissociation plays in the response to trauma and are of considerable clinical and theoretical importance in view of the lifetime prevalence of traumatic experiences in the general population.

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Full Text: 1994\Ame J Psy151, 933.pdf

Abstract: The authors reviewed the distribution of citations in 278 anxiety disorder studies published in 14 journals in 1990 and 1991. Although both psychiatrists and psychologists frequently authored studies, few journals showed evidence of a substantial interdisciplinary perspective. The 278 anxiety disorder studies contained 3,199 references to articles in the 14 journals. There was a high percentage of “self-citation” in some of the journals and only limited evidence of citations across journal and author disciplines. These findings suggest that anxiety disorder research findings are often not widely disseminated across disciplines.

Keywords: Author, Citation, Citations, General Psychiatric Journals, Journals, Psychology, Research, Trends

Atkinson, M., Zibin, S. and Chuang, H. (1997), Characterizing quality of life among patients with chronic mental illness: A critical examination of the self-report methodology. *American Journal of Psychiatry*, **154** (1), 99-105.

Full Text: [A\Ame J Psy154, 99.pdf](A/Ame%20J%20Psy154,%2099.pdf)

Abstract: OBJECTIVE: The purposes of the study were 1) to characterize the quality of life of three patient groups with chronic mental illness, 2) to evaluate differences in reported life quality among the three groups, and 3) to evaluate the validity of a self-report, methodology by comparing these results with several objective indicators of life quality.

METHOD: The study group consisted of chronically mentally ill patients with schizophrenia (N = 69), bipolar disorder (N = 37), or major depression (N = 35). Subjects were administered the Quality of Life Index, and comparisons of both objective and self-report life quality indices were made among the three groups. Quality of life ratings of these subjects were also compared with those of patients with a chronic physical illness.

RESULTS: The two groups with mood disorders reported significantly lower scores on the Quality of Life Index than the patients with schizophrenia. Moreover, the scores on the Quality of Life Index for patients with schizophrenia were very similar to those of the comparison group of physically ill patients. The opposite trend emerged when groups were compared with respect to objective indicators of life quality. Schizophrenic patients experienced more objectively aversive life circumstances than either of the affectively disturbed groups.

CONCLUSIONS: The validity of self-report measures of life satisfaction is questioned, particularly for use with affectively disturbed populations, since scores may be influenced by affective bias, poor insight, and recent life events.

Keywords: Of-Life, Health, Ill, Satisfaction, Adjustment, Instrument, Interview, Inventory, Outcomes, Validity

# Title: American Journal of Psychology

Full Journal Title: [American Journal of Psychology](http://pao.chadwyck.co.uk/journals/displayItemFromId.do?QueryType=journals&ItemID=1016); [American Journal of Psychology](http://uk.jstor.org/journals/00029556.html); [American Journal of Psychology](http://galenet.galegroup.com/servlet/IOURL?issn=0002-9556&title=American+Journal+of+Psychology&locID=jrycal5&prod=HWRC&finalAuth=true); [American Journal of Psychology](http://infotrac.galegroup.com/itw/infomark/0/1/1/purl=rc18_EAIM_0__jn+%22American+Journal+of+Psychology%22?sw_aep=jrycal5)

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JCR Abbreviated Title:

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Issues/Year:

Journal Country/Territory:

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Publisher Address:

Subject Categories:

: Impact Factor

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Full Text: [-1959\Ame J Psy58, 425.pdf](-1959/Ame%20J%20Psy58,%20425.pdf)

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Full Text: [-1959\Ame J Psy59, 401.pdf](-1959/Ame%20J%20Psy59,%20401.pdf)

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Full Text: [-1959\Ame J Psy60, 284.pdf](-1959/Ame%20J%20Psy60,%20284.pdf)

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Full Text: [-1959\Ame J Psy61, 79.pdf](-1959/Ame%20J%20Psy61,%2079.pdf)

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Full Text: [-1959\Ame J Psy63, 342.pdf](-1959/Ame%20J%20Psy63,%20342.pdf)

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Full Text: [1960-80\Ame J Psy81, 269.pdf](1960-80/Ame%20J%20Psy81,%20269.pdf)

# Title: American Journal of Public Health

Full Journal Title: American Journal of Public Health

ISO Abbreviated Title: Am. J. Public Health

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Language: English

Publisher: Amer Public Health Assoc Inc

Publisher Address: 1015 Fifteenth St NW, Washington, DC 20005

Subject Categories:

Public, Environmental & Occupational Health: Impact Factor 3.015, 7/85 (1999)

Berry, P.H. and Thompson, M.H. (1967), Surveillance monitoring for environmental pollutants. *American Journal of Public Health Nations Health*, **57** (10), 1802-1806.

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Full Text: [1960-80\Ame J Pub Hea65, 1060.pdf](1960-80/Ame%20J%20Pub%20Hea65,%201060.pdf)

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Full Text: [1960-80\Ame J Pub Hea65, 1111.pdf](1960-80/Ame%20J%20Pub%20Hea65,%201111.pdf)

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Full Text: [1960-80\Ame J Pub Hea66, 635.pdf](1960-80/Ame%20J%20Pub%20Hea66,%20635.pdf)

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Full Text: [1960-80\Ame J Pub Hea66, 639.pdf](1960-80/Ame%20J%20Pub%20Hea66,%20639.pdf)

Abstract: The Safe Drinking Water Act of 1974 represents an important step in improving the quality of public water supply in the United States. However, it fails to address two important problems: (1) The 1970 Public Health Service Community Water Supply Survey revealed that small public water supply systems often deliver poor quality water. The Act does not assure that these supplies will now receive appropriate attention; furthermore, the Act does not address the needs of the 50 million people not now served by public water systems; (2) About one-third of our population draws its drinking waters from polluted sources. The decisions to use these low cost sources were made generations ago when consumers could be protected from water-borne infectious disease. A new problem has now arisen-the presence of numerous synthetic organic chemicals of uncertain health consequence, not removed by conventional water treatment. The Act does not address this problem. Regionalization and the integration of water resource and water pollution control authorities are proposed as a reasonable solution to these problems. The development of dual water supply systems in order to conserve scarce pure water sources for human consumption appears to be a feasible way to avoid using polluted waters for drinking. The development of dual supplies would be enhanced by regionalization and integration of water authorities.

Ruben, F.L., Streiff, E.J., Neal, M. and Michaels, R.H. (1976), Epidemiologic studies of Reye’s syndrome: Cases seen in Pittsburgh, October 1973-April 1975. *American Journal of Public Health*, **66** (11), 1096-1098.

Full Text: [1960-80\Ame J Pub Hea66, 1096.pdf](1960-80/Ame%20J%20Pub%20Hea66,%201096.pdf)

Abstract: Twenty-seven cases of Reye’s syndrome (RS) were admitted over a 19-month period to one urban hospital. All lived in a suburban or rural location and 23 cases occurred during two influenza outbreaks. Two to three months following the last cases of RS, 24 families of RS cases and 21 control families representing neighbors or friends were interviewed for factors which could predispose to RS. Children with RS had an illness immediately preceding the onset of RS more frequently than did controls (p less than .001). No other clinical, familial, or environmental factors distinguished RS children and families from controls. Water samples, collected during the interviews, from 34 homes showed no potential toxins. The geographic pattern of RS cases with localization exclusively to rural areas suggests that an as yet unidentified environmental factor may be related to the development of RS.

James, S.C. (1977), Metals in municipal landfill leachate and their health effects. *American Journal of Public Health*, **67** (5), 429-432.

Full Text: [1960-80\Ame J Pub Hea67, 429.pdf](1960-80/Ame%20J%20Pub%20Hea67,%20429.pdf)

Abstract: The leachate from five municipal landfills (containing no industrial waste or sewage sludge) was studied in 1975 by the U. S. Environmental Protection Agency (EPA). Copper was not present in concentrations above EPA standards. Zinc concentrations decreased with age of the site and were below standards. The amounts of cadmium and chromium appear to vary greatly from site to site. Lead, selenium, iron, and mercury were present at each site in concentrations above standards, regardless of site age. Although raw leachate contains concentrations of heavy metals in excess of the drinking water standards, it is not clear how likely it would be for these recorded levels to be found in drinking water supplies or for contamination to reach the human body. Before leachate reaches an aquifer, it is subject to the attenuating effect of the unsaturated zone. If municipal solid waste is placed directly into ground water, or if leachate is allowed to drain directly into surface water, severe damage to water quality can result. Further study of the environmental effects of leachate are being undertaken by the Environmental Protection Agency.

Frankel, R.J. (1979), Operation of the coconut fiber/burnt rice husks filter for supplying drinking water to rural communities in Southeast Asia. *American Journal of Public Health*, **69** (1), 75-76.

Full Text: [1960-80\Ame J Pub Hea69, 75.pdf](1960-80/Ame%20J%20Pub%20Hea69,%2075.pdf)

Morse, D.L., Watson, W.N., Housworth, J., Witherell, L.E. and Landrigan, P.J. (1979), Exposure of children to lead in drinking water. *American Journal of Public Health*, **69** (7), 711-712.

Full Text: [1960-80\Ame J Pub Hea69, 711.pdf](1960-80/Ame%20J%20Pub%20Hea69,%20711.pdf)

Jones, R.F., Cech, I.I., Holguin, A.H. and Hardy, R.J. (1979), Evaluation of the relationship of sodium in drinking water and toxemia of pregnancy. *American Journal of Public Health*, **69** (9), 917-921.

Full Text: [1960-80\Ame J Pub Hea69, 917.pdf](1960-80/Ame%20J%20Pub%20Hea69,%20917.pdf)

Abstract: This study is a retrospective case comparison analysis of the relationship of water-borne Na+ and toxemia of pregnancy as a part of a continuous investigation at our facility on the role of various water constituents in human chronic disease. Five hundred thirty-seven toxemic pregnant women delivered at Jefferson Davis Hospital, Houston, Texas, during 1976 were matched by age, race, obstetrical history, and month of delivery to 537 non-toxemic controls. Sodium concentration in each patient’s drinking water was derived, based on her address, from earlier prepared maps of sodium distribution in Houston’s water supplies. Paired t-tests were performed to compare the Na+ levels, which varied from 19 to 250 mg/l in water supplies of cases and controls. Odds ratio analysis was used to test for the presence of a gradient in occurrence of toxemia in parallel with the gradient of Na+. No significant impact of water-borne Na+ in the indicated range was observed. Further studies incorporating still higher ranges are contemplated.

Gruener, N. and Lockwood, M.P. (1980), Mutagenic activity in drinking water. *American Journal of Public Health*, **70** (3), 276-278.

Full Text: [1960-80\Ame J Pub Hea70, 276.pdf](1960-80/Ame%20J%20Pub%20Hea70,%20276.pdf)

Abstract: Drinking water samples concentrated by freeze drying were found to be mutagenic in a mammalian tissue culture assay using Chinese hamster embryonic lung cells (V79). The mutagenicity could be enhanced by the promoter 12-O-tetradecanoyl-phorbol-13-acetate. The water itself was also shown to contain promoting chemicals. The mutation frequency of cells pretreated with low levels of benzo (a)pyrene was increased following subsequent exposure to the concentrated water sample. Approaches to estimate the risk involved in exposure to present drinking water are proposed.

Carlo, G.L. and Mettlin, C.J. (1980), Cancer incidence and trihalomethane concentrations in a public drinking water system. *American Journal of Public Health*, **70** (5), 523-524.

Full Text: [1960-80\Ame J Pub Hea70, 523.pdf](1960-80/Ame%20J%20Pub%20Hea70,%20523.pdf)

Abstract: Four thousand two hundred fifty-five cases of esophageal, stomach, colon, rectal, bladder, and pancreatic cancer reported from Erie County, NY between 1973 and 1976 were analyzed in terms of their relationship to type of water source, level of trihalomethane (THM) and various social and economic parameters. Among white males, a significant positive correlation existed between pancreatic cancer incidence rates and THM level. No other significant correlations were observed. This research lends little or no support to the hypothesis that THM levels which meet present standards are related to the incidence of human cancer.

Tuthill, R.W. and Calabrese, E.J. (1981), Drinking water sodium and blood pressure in children: A second look. *American Journal of Public Health*, **71** (7), 722-729.

Full Text: [1981\Ame J Pub Hea71, 722.pdf](1981/Ame%20J%20Pub%20Hea71,%20722.pdf)

Abstract: A previous study by the current authors demonstrated a statistically significant and clinically important elevation of 3-5 mmHg in mean systolic and diastolic blood pressure in high school sophomores in a community with 108 mg/L of sodium in the water supply when compared to their peers in an appropriately matched community with 8 mg/L of sodium. The current investigation, employing identical techniques but studying third graders in the same two communities, showed similar results. This second look considered dietary intake and urinary excretion of sodium. Since the difference in 24-hour dietary sodium consumption was 300 milligrams between the communities, an intake of one liter of high sodium tap water represented approximately 25 per cent of the difference in total sodium intake between the two communities. These studies suggest that sodium consumption in both drinking water and diet may be contributing to the different blood pressure distributions among the normotensive children in the two communities.

Willett, W.C. (1981), Drinking water sodium and blood pressure: A cautious view of the ‘second look’. *American Journal of Public Health*, **71** (7), 729-732.

Full Text: [1981\Ame J Pub Hea71, 729.pdf](1981/Ame%20J%20Pub%20Hea71,%20729.pdf)

Harter, L., Frost, F. and Jakubowski, W. (1982), *Giardia* prevalence among 1-to-3-year-old children in two Washington State counties. *American Journal of Public Health*, **72** (4), 386-388.

Full Text: [1982\Ame J Pub Hea72, 386.pdf](1982/Ame%20J%20Pub%20Hea72,%20386.pdf)

Abstract: A survey of intestinal parasites was conducted in two Washington counties. *Giardia* prevalence among 518 children surveyed was 7.1 per cent and was unrelated to the source of domestic drinking water (surface or well), day care center attendance, or parental occupation. Identified risk factors for *Giardia* infection include a history of drinking untreated surface water and having two or more siblings between the ages of 3 and 10 years. of 47 family members of *Giardia* positive children, 10 (21.3 per cent) were *Giardia* positive.

Brown, H.S., Bishop, D.R. and Rowan, C.A. (1984), The role of skin absorption as a route of exposure for volatile organic compounds (VOCs) in drinking water. *American Journal of Public Health*, **74** (5), 479-484.

Full Text: [1984\Ame J Pub Hea74, 479.pdf](1984/Ame%20J%20Pub%20Hea74,%20479.pdf)

Abstract: Assessments of drinking water safety rely on the assumption that ingestion represents the principal route of exposure. A review of the experimental literature revealed that skin penetration rates for solvents are remarkably high, and that the stratum corneum is a less effective barrier to penetration than traditionally assumed. Based on published skin absorption rates, we used Fick’s law (Jos = Kop delta Cos) to determine permeability constants for selected compounds. We then calculated dose per kilogram for nine different exposure situations and compared this to the oral dose per kilogram. We found that skin absorption contributed from 29-91 per cent of the total dose, averaging 64 per cent. Dose per kilogram body weight ranged from .0002 mg/kg-.18 mg/kg, with an average of .03 mg/kg. In weak aqueous solutions, flux of the solute is directly proportional to concentration. Laboratory approaches differ markedly from environmental exposures and can underestimate absorption. We conclude that skin absorption of contaminants in drinking water has been underestimated and that ingestion may not constitute the sole or even primary route of exposure.

Levy, S.M., Bawden, J.W., Bowden, B.S. and Rozier, R.G. (1984), Fluoride analyses of patient water supplies requested by North Carolina health professionals. *American Journal of Public Health*, **74** (12), 1412-1414.

Full Text: [1984\Ame J Pub Hea74, 1412.pdf](1984/Ame%20J%20Pub%20Hea74,%201412.pdf)

Abstract: The frequencies, patterns, and results of 1,900 patient drinking water assays for fluoride content requested in a six-month period by North Carolina health professionals were determined. Twelve per cent of the samples warranted adjustment from the full dosage fluoride supplement. Less than 3 per cent of physicians and 8 per cent of dentists submitted samples. Water supplies should be tested before a systemic fluoride supplement is prescribed. Either few dentists and physicians in North Carolina test water before prescribing supplements or few prescribe them at all.

? Rosner, D. and Markowitz, G.A. (1985), A gift of god: The public-health controversy over leaded gasoline during the 1920s. *American Journal of Public Health*, **75** (4), 344-352.

Full Text: [1985\Ame J Pub Hea75, 344.pdf](1985/Ame%20J%20Pub%20Hea75,%20344.pdf)

Lackland, D.T., Weinrich, M.C., Wheeler, F.C. and Shepard, D.M. (1985), Sodium in drinking water in South Carolina. *American Journal of Public Health*, **75** (7), 772-774.

Full Text: [1985\Ame J Pub Hea75, 772.pdf](1985/Ame%20J%20Pub%20Hea75,%20772.pdf)

Abstract: The potential contribution of drinking water sodium to total consumption and to blood pressure levels is explored in a South Carolina survey. Most (96 per cent) of the population was served by drinking water containing less than 100 mg/l Na (median 14.8 mg/l). For households with water sources containing greater than or equal to 100 mg/l Na, drinking water accounted for approximately 8.5 per cent of total estimated consumption. After adjustment for age, sex, race, body mass index, education, and dietary sodium, a negative association between diastolic blood pressure and drinking water sodium levels was found.

Tarr, J.A. (1985), Industrial wastes and public health: Some historical notes, Part I, 1876-1932. *American Journal of Public Health*, **75** (9), 1059-1067.

Full Text: [1985\Ame J Pub Hea75, 1059.pdf](1985/Ame%20J%20Pub%20Hea75,%201059.pdf)

Abstract: This article has focused on the relatively low priority accorded industrial wastes compared to human wastes by the public health community in the period from 1876 through 1932. The critical reason for this prioritization was the potential for acute health effects from human wastes as compared with the belief that industrial wastes had only indirect effects. State departments of health normally only responded to industrial wastes when they endangered the potable nature of water supplies or interfered with water and sewage treatment processes. Within the public health community, however, a relatively small group of interdisciplinary professionals argued for attention to the indirect health effects of industrial wastes and their impacts on the total stream environment. In conjunction with other groups interested in clean streams-such as sportsmen and manufacturers who required high quality process water-they pushed for a broader state legislative mandate in regard to pollution control. Some states created new bureaus or boards with responsibility for industrial wastes and the larger stream environment but the attack on industrial pollution remained limited in this period. The final significant development regarding industrial pollution and public health concerned the formulation by Streeter-Phelps of the Public Health Service of a theory of stream purification with a set of general quantitative indicators. This application was of particular importance in regard to the high-oxygen consuming nature of organic industrial wastes and the wide variety of effluents that existed. Industrial wastes constituted what Harvey Brooks, in his essay “Science Indicators and Science Priorities” calls a very “messy” research problem-one that does “not lend itself to elegant and widely applicable generalizations.” (ABSTRACT TRUNCATED AT 250 WORDS)

Zmirou, D., Ferley, J.P., Collin, J.F., Charrel, M. and Berlin, J. (1987), A follow-up study of gastro-intestinal diseases related to bacteriologically substandard drinking water. *American Journal of Public Health*, **77** (5), 582-584.

Full Text: [1987\Ame J Pub Hea77, 582.pdf](1987/Ame%20J%20Pub%20Hea77,%20582.pdf)

Abstract: In a prospective follow-up study conducted in 52 French alpine villages, one weekly water sample was taken in each village provided with untreated ground water and analyzed as to the presence of four indicator bacteria: total plate count, total coliforms, thermotolerant (fecal) coliforms, and fecal streptococci. Cases of acute gastro-intestinal disease (AGID) occurring among 29,272 inhabitants were reported through physicians, pharmacists, and primary school teachers. A loglinear model identified fecal streptococcus (FS) as the best predictor; the presence of fecal coliforms enhanced the effect of FS. The total bacteria count and the total coliforms had no independent contributions. A threshold analysis suggested that any level of indicator bacteria above zero was associated with an excess of AGID.

? Eichorn, P. and Yankauer, A. (1987), Do authors check their references: A survey of accuracy of references in 3 public-health journals. *American Journal of Public Health*, **77** (8), 1011-1012.

Full Text: [1987\Ame J Pub Hea77, 1011.pdf](1987/Ame%20J%20Pub%20Hea77,%201011.pdf)

Wong, O., Whorton, M.D., Gordon, N. and Morgan, R.W. (1988), An epidemiologic investigation of the relationship between DBCP contamination in drinking water and birth rates in Fresno County, California. *American Journal of Public Health*, **78** (1), 43-46.

Full Text: [1988\Ame J Pub Hea78, 43.pdf](1988/Ame%20J%20Pub%20Hea78,%2043.pdf)

Abstract: This report describes an epidemiologic investigation of the relationship between DBCP (dibromochloropropane) contamination in drinking water and birth rates between 1978 and 1982 in Fresno County, California. Census tracts in the county were categorized according to DBCP level in their drinking water. Standardized birth ratios and relative birth ratios (adjusted for age, race, per cent Hispanic, and parity) were calculated for these census tracts. No relation between birth ratios and DBCP contamination in drinking water was found.

Whorton, M.D., Morgan, R.W., Wong, O., Larson, S. and Gordon, N. (1988), Problems associated with collecting drinking water quality data for community studies: A case example, Fresno County, California. *American Journal of Public Health*, **78** (1), 47-51.

Full Text: [1988\Ame J Pub Hea78, 47.pdf](1988/Ame%20J%20Pub%20Hea78,%2047.pdf)

Abstract: This paper discusses methodology in developing exposure data for the water supply contaminant dibromochloropropane (DBCP) in Fresno County, California. There are 532 drinking water systems (49 large and 483 small) within Fresno County plus 14,000 private wells. We determined the number of wells per system, the output per well, and the population served by each system. The task of deriving water quality estimates for each census tract was complicated by the fact that a single census tract can be served by more than one system; each system usually has more than one well; and a single well can have several episodes of testing for various contaminants. We calculated a series of weighted averages for concentrations of DBCP, arsenic, and nitrates for each census tract, using water production figures for each well as the weighting factor. Water quality data were derived from a total of 14, 861 laboratory reports, although the majority did not report on all contaminants. Mean DBCP levels ranged from 0.0041 ppb to 5.7543 ppb among the census tracts. We found no correlation between DBCP levels per census tract compared to either arsenic or nitrates. We believe that we made as complete an exposure assessment as practically feasible.

Jakubowski, W. (1988), Purple burps and the filtration of drinking water supplies. *American Journal of Public Health*, **78** (2), 123-125.

Full Text: [1988\Ame J Pub Hea78, 123.pdf](1988/Ame%20J%20Pub%20Hea78,%20123.pdf)

Petersen, L.R., Denis, D., Brown, D., Hadler, J.L. and Helgerson, S.D. (1988), Community health effects of a municipal water supply hyperfluoridation accident. *American Journal of Public Health*, **78** (6), 711-713.

Full Text: [1988\Ame J Pub Hea78, 711.pdf](1988/Ame%20J%20Pub%20Hea78,%20711.pdf)

Abstract: For 12 hours, excess hydrofluorosilicic acid was diverted to a 127-home community water supply. Fluoride levels peaked at 51 parts per million (ppm). Water acidification caused copper to leach from the domestic plumbing; raising copper levels to 25-41 ppm. Fifty-two (33 per cent) of those who drank hyperfluoridated water developed mild gastroenteritis. Vomiting was uncommon and symptom onsets usually occurred greater than 30 minutes after drinking water; suggesting that fluoride, rather than copper, caused illness. Skin contact with hyperfluoridated water caused itching and skin rashes.

Esrey, S.A., Habicht, J.P., Latham, M.C., Sisler, D.G. and Casella, G. (1988), Drinking water source, diarrheal morbidity, and child growth in villages with both traditional and improved water supplies in rural Lesotho, southern Africa. *American Journal of Public Health*, **78** (11), 1451-1455.

Full Text: [1988\Ame J Pub Hea78, 1451.pdf](1988/Ame%20J%20Pub%20Hea78,%201451.pdf)

Abstract: This study examined the growth and morbidity rates of young children in relation to exclusive and non-exclusive use of improved water supplies in rural Lesotho, southern Africa. Data were collected for 247 children 60 months of age and under between July 1984 and February 1985 in 10 villages that had an improved water supply at least one year prior to investigation. Children whose families relied exclusively on the new water supply for their drinking and cooking needs grew 0.438 cm and 235 g more in six months than children whose families supplemented the new water supply with the use of contaminated traditional water for drinking and cooking. The difference in growth was greater among children over 12 months of age at the start of the evaluation than among infants. This may be explained partly by lower rates for *Giardia lamblia*, the most commonly identified pathogen in stools in older children. Among infants, similar rates of *Campylobacter*, the most commonly isolated pathogen among infants, may have prevented larger differences. Results suggest that improved drinking water supplies can benefit preschool children’s health after infancy, but only if they are functioning and utilized exclusively for drinking and cooking purposes.

Gallaher, M.M., Herndon, J.L., Nims, L.J., Sterling, C.R., Grabowski, D.J. and Hull, H.F. (1989), Cryptosporidiosis and surface water. *American Journal of Public Health*, **79** (1), 39-42.

Full Text: [1989\Ame J Pub Hea79, 39.pdf](1989/Ame%20J%20Pub%20Hea79,%2039.pdf)

Abstract: In the period July through October, (1986), 78 laboratory-confirmed cases of cryptosporidiosis were identified in New Mexico. To determine possible risk factors for development of this disease, we conducted a case-control study; 24 case-patients and 46 neighborhood controls were interviewed. Seventeen (71 per cent) of the 24 case-patients were females, seven (29%) were males; their ages ranged from 4 months to 44 years, median 3 years. There was a strong association between drinking surface water and illness: five of the 24 case-patients, but none of the 46 controls drank untreated surface water. Among children, illness was also associated with attending a day care center where other children were ill (odds ratio = 13.1).

Waller, A.E., Baker, S.P. and Szocka, A. (1989), Childhood injury deaths: National analysis and geographic variations. *American Journal of Public Health*, **79** (3), 310-315.

Full Text: [1989\Ame J Pub Hea79, 310.pdf](1989/Ame%20J%20Pub%20Hea79,%20310.pdf)

Bois, F.Y., Tozer, T.N., Zeise, L. and Benet, L.Z. (1989), Application of clearance concepts to the assessment of exposure to lead in drinking water. *American Journal of Public Health*, **79** (7), 827-831.

Full Text: [1989\Ame J Pub Hea79, 827.pdf](1989/Ame%20J%20Pub%20Hea79,%20827.pdf)

Abstract: This paper explores the application of clearance concepts to environmental toxicology. Lead, for which a clearance of about 0.5 ml/min is estimated from published data, is chosen as an example. An index for the contribution of drinking water to total exposure is developed using these concepts. For lead, this index is shown to increase with the concentration of the metal in water; it is higher for children than for adults. At the maximum contaminant level (MCL) of 10 micrograms/L proposed by the US Environmental Protection Agency (EPA), the average contribution from lead in drinking water is estimated to be 7 percent. The contribution in children is about twice as great. At and above the current MCL of 50 micrograms/L, drinking water becomes a major source of lead exposure.

Fagliano, J., Berry, M., Bove, F. and Burke, T. (1990), Drinking water contamination and the incidence of leukemia: An ecologic study. *American Journal of Public Health*, **80** (10), 1209-1212.

Full Text: [1990\Ame J Pub Hea80, 1209.pdf](1990/Ame%20J%20Pub%20Hea80,%201209.pdf)

Abstract: An ecologic study was performed to examine the relation between the incidence of leukemias and the occurrence of volatile organic chemical (VOC) contamination of drinking water supplies within a study area comprised of subpopulations differentially exposed to drinking water VOCs (trichloroethylene and related solvents). Populations served by community water supplies were classified into exposure categories according to VOC contamination status based on 1984-85 sampling data. Leukemia incidence data (1979-84) were collected from a population-based cancer registry. For females, the standardized incidence ratio was elevated only in towns in the highest of three exposure categories. No association was observed in males in any of the exposure categories. A Poisson regression analysis of the data, using finer exposure strata, indicated an increase in risk among females with increasing level of contamination which appeared to be distributed evenly across all age strata. The rate ratio for females at the highest exposure stratum for total non-THM VOCs compared to the least exposed stratum was 1.68. The observed association appears to suggest that drinking water contaminated with VOCs may increase the incidence of leukemia among exposed females, but caution is advised in the interpretation of these results because of the uncertainties inherent in ecologic studies.

Osterman, J.W. (1990), Evaluating the impact of municipal water fluoridation on the aquatic environment. *American Journal of Public Health*, **80** (10), 1230-1235.

Full Text: [1990\Ame J Pub Hea80, 1230.pdf](1990/Ame%20J%20Pub%20Hea80,%201230.pdf)

Abstract: Although highly beneficial for dental health, low concentrations of fluoride in environmental waters may be toxic to several organisms. In an era of heightened public awareness about the environment, this may lead city officials to withhold implementing water fluoridation for environmental reasons. This paper presents a mass balance approach to evaluate this perceived risk. Generally speaking, fluoridated water loss during use, dilution of sewage by rain and ground water infiltrate, fluoride removal during secondary sewage treatment, and diffusion dynamics at effluent outfall combine to eliminate fluoridation-related environmental effects. In Montreal, water fluoridation would raise average aquatic fluoride levels in the waste water plume immediately below effluent outfall by only 0.05-0.09 mg/l. Downstream, these changes would be only 0.02-0.05 mg/l at 1 km, and 0.01-0.03 mg/l at 2 km below outfall. Overall river fluoride concentrations theoretically would be raised by 0.001-0.002 mg/l, a value not measurable by current analytical techniques. All resulting concentrations would be well below those recommended for environmental safety and would not exceed natural levels found elsewhere in Quebec. A literature review did not reveal any examples of municipal water fluoridation causing recommended environmental concentrations to be exceeded, although excesses occurred in several cases of severe industrial water pollution.

Fuortes, L., McNutt, L.A. and Lynch, C. (1990), Leukemia incidence and radioactivity in drinking water in 59 Iowa towns. *American Journal of Public Health*, **80** (10), 1261-1262.

Full Text: [1990\Ame J Pub Hea80, 1261.pdf](1990/Ame%20J%20Pub%20Hea80,%201261.pdf)

Abstract: Fifty-nine towns in Iowa with single source drinking water supplies were stratified on the basis of radium content in finished non-softened water to test the hypothesis of an association with total or acute myeloid leukemia. Fourteen towns had radium concentrations in drinking water exceeding the EPA safety limit of 5 picocuries per liter (pCi/L). A small increasing trend existed for total leukemia with increased radium content in drinking water that is in accordance with either the hypothesis of no effect or of a small effect.

Morris, P.D., Campbell, D.S., Taylor, T.J. and Freeman, J.I. (1991), Clinical and epidemiological features of neurotoxic shellfish poisoning in North Carolina. *American Journal of Public Health*, **81** (4), 471-474.

Full Text: [1991\Ame J Pub Hea81, 471.pdf](1991/Ame%20J%20Pub%20Hea81,%20471.pdf)

Abstract: BACKGROUND: In October 1987, a red tide due to P. brevis affected the North Carolina coast for the first time. The purpose of our study was to describe the clinical and epidemiological features of neurotoxic shellfish poisoning (NSP), an illness caused by eating shellfish contaminated with the neurotoxins of P. brevis.

METHODS: Active surveillance was established for cases of NSP. A descriptive study of the NSP cases was then completed.

RESULTS: Forty-eight persons, who had eaten oysters at 20 meals, met the case definition. A variety of gastrointestinal tract and neurological symptoms were reported. The illnesses were generally mild and of short duration, and there were no deaths. Forty-one (85 percent) affected persons lived in five communities located within a 70-kilometer area along the coast. Cases occurred from October 27 to December 9; 27 (56 percent) of the cases occurred before the first closure of affected shellfish waters on November 2. There was a significant increase in the illness attack rate with an increase in the number of oysters eaten.

CONCLUSIONS: Routine monitoring of coastal waters for P. brevis is needed to facilitate earlier recognition of red tides, closure of affected areas, and education of the public before substantial exposure to contaminated shellfish occurs.

Mahoney, M.C., Nasca, P.C., Burnett, W.S. and Melius, J.M. (1991), Bone cancer incidence rates in New York State: Time trends and fluoridated drinking water. *American Journal of Public Health*, **81** (4), 475-479.

Full Text: [1991\Ame J Pub Hea81, 475.pdf](1991/Ame%20J%20Pub%20Hea81,%20475.pdf)

Abstract: BACKGROUND: Recent animal studies of the potential carcinogenicity of fluoride prompted an examination of bone cancer incidence rates.

METHODS: Trends in the incidence of primary bone cancers, including the incidence of osteosarcomas were examined among residents of New York State, exclusive of New York City. Average annual osteosarcoma incidence rates in fluoridated and non-fluoridated areas were also compared.

RESULTS: Among persons less than 30 years of age at diagnosis, bone cancer incidence among males demonstrated a significant increase since 1955, while incidence among females has remained unchanged. A significant decrease in bone cancer incidence rates since 1955 was observed among both males and females age 30 years and over at time of diagnosis. Osteosarcoma incidence rates have remained essentially unchanged since 1970, among both younger and older males and females. The average annual age adjusted incidence of osteosarcomas (1976-1987) in areas served by fluoridated water supplies was not found to differ from osteosarcoma incidence rates in non-fluoridated areas.

CONCLUSIONS: These data do not support an association between fluoride in drinking water and the occurrence of cancer of the bone.

Keywords: Mortality, Supplies

? Needleman, H.L. (1991), Childhood lead-poisoning: A disease for the history texts. *American Journal of Public Health*, **81** (6), 685-687.

Full Text: Ame J Pub Hea81, 685.pdf

Payment, P., Richardson, L., Siemiatycki, J., Dewar, R., Edwardes, M. and Franco, E. (1991), A randomized trial to evaluate the risk of gastrointestinal disease due to consumption of drinking water meeting current microbiological standards. *American Journal of Public Health*, **81** (6), 703-708.

Full Text: [1991\Ame J Pub Hea81, 703.pdf](1991/Ame%20J%20Pub%20Hea81,%20703.pdf)

Abstract: BACKGROUND: This project directly and empirically measured the level of gastrointestinal (GI) illness related to the consumption of tapwater prepared from sewage-contaminated surface waters and meeting current water quality criteria.

METHODS: A randomized intervention trial was carried out; 299 eligible households were supplied with domestic water filters (reverse-osmosis) that eliminate microbial and chemical contaminants from their water, and 307 households were left with their usual tapwater without a filter. The GI symptomatology was evaluated by means of a family health diary maintained prospectively by all study families over a 15-month period.

RESULTS: The estimated annual incidence of GI illness was 0.76 among tapwater drinkers compared with 0.50 among filtered water drinkers (p less than 0.01). These findings were consistently observed in all population subgroups.

CONCLUSION: It is estimated that 35% of the reported GI illnesses among the tapwater drinkers were water-related and preventable. Our results raise questions about the adequacy of current standards of drinking water quality to prevent water-borne endemic gastrointestinal illness.

Rose, J.B., Haas, C.N. and Regli, S. (1991), Risk assessment and control of waterborne *Giardia*sis. *American Journal of Public Health*, **81** (6), 709-713.

Full Text: [1991\Ame J Pub Hea81, 709.pdf](1991/Ame%20J%20Pub%20Hea81,%20709.pdf)

Abstract: BACKGROUND: Waterborne *Giardia*sis has been increasing in the United States with 95 outbreaks reported over the last 25 years. The Safe Drinking Water Act has mandated control of this pathogen.

METHODS: A risk assessment model was developed to estimate risk of infection after exposure to treated waters containing varying levels of *Giardia* cysts. The model was defined by a dose-response curve developed from human feeding studies for *Giardia* and assumed 2L of water consumption per day. Data on concentrations and distribution of the organism in source waters were used to assess exposure after varying reductions achieved through treatment.

RESULTS: In surveys reporting prevalence and levels of *Giardia* cyst contamination, average levels of cysts in surface waters ranged from 0.33 to 104/100L; from pristine watersheds (protected from all human activity) 0.6 to 5/100L. Yearly risks were 4.8×10-3 for systems using polluted waters and 1.3×10-4 for pristine waters with a 10-3 treatment reduction.

CONCLUSION: Public Health officials will need to work with the water industry to ensure a risk of less than 1/10,000 for source waters with 0.7 to 70 cysts per 100 liters through treatment achieving reduction of 10-3 to 10-5, respectively, of *Giardia* cysts.

Ciesielski, S., Handzel, T. and Sobsey, M. (1991), The microbiologic quality of drinking water in North Carolina migrant labor camps. *American Journal of Public Health*, **81** (6), 762-764.

Full Text: [1991\Ame J Pub Hea81, 762.pdf](1991/Ame%20J%20Pub%20Hea81,%20762.pdf)

Abstract: A two-year study of the microbiological quality of drinking water in 27 randomly selected North Carolina migrant labor camps yielded total and fecal coliform prevalences of 44 percent and 26 percent, respectively in 1988 and similar but higher prevalences in 1989. Preoccupancy testing by county sanitarians had found virtually no total coliform contamination. These findings suggest that a potential source of contamination existed and that current testing protocols which rely on preoccupancy testing may be inadequate.

Osberg, J.S. and Di Scala, C. (1992), Morbidity among pediatric motor vehicle crash victims: The effectiveness of seat belts. *American Journal of Public Health*, **82** (3), 422-425.

Full Text: [A\Ame J Pub Hea82, 422.pdf](A/Ame%20J%20Pub%20Hea82,%20422.pdf)

Abstract: It is well established that seat belts reduce mortality and morbidity among children. Data are presented for 413 children injured severely enough in motor vehicle crashes to require hospitalization. of the unrestrained children, 4.5% died, compared with 2.4% of the belted children. Unrestrained children had a higher proportion of injuries in four of five anatomical regions, were more severely injured, stayed longer in the hospital, and were 15% more likely than belted children to be discharged with impairments.

Keywords: Injury Severity, Safety Belts, Experience, Children, Fatalities, Accidents, Fractures, Efficacy, Wearers, Care

Morris, R.D., Audet, A.M., Angelillo, I.F., Chalmers, T.C. and Mosteller, F. (1992), Chlorination, chlorination by-products, and cancer: A meta-analysis [published erratum appears in *American Journal of Public Health* 1993 Sep; 83 (9) (1257)] [see comments]. *American Journal of Public Health*, **82** (7), 955-963.

Full Text: [A\Ame J Pub Hea82, 955.pdf](A/Ame%20J%20Pub%20Hea82,%20955.pdf)

Abstract: OBJECTIVES. Individual epidemiological investigations into the association between chlorination by-products in drinking water and cancer have been suggestive but inconclusive. Enough studies exist to provide the basis for a meaningful meta-analysis.

METHODS. An extensive literature search was performed to identify pertinent case-control studies and cohort studies. Consumption of chlorinated water, surface water, or water with high levels of chloroform was used as a surrogate for exposure to chlorination by-products. Relative risk estimates were abstracted from the individual studies and pooled.

RESULTS. A simple meta-analysis of all cancer sites yielded a relative risk estimate for exposure to chlorination by-products of 1.15 (95% CI: 1.09, 1.20). Pooled relative risk estimates for organ-specific neoplasms were 1.21 (95% CI: 1.09, 1.34) for bladder cancer and 1.38 (95% CI: 1.01, 1.87) for rectal cancer. When studies that adjusted for potential confounders were pooled separately, estimates of relative risks did not change substantially.

CONCLUSIONS. The results of this meta-analysis suggest a positive association between consumption of chlorination by-products in drinking water and bladder and rectal cancer in humans.

Kross, B.C., Hallberg, G.R., Bruner, D.R., Cherryholmes, K. and Johnson, J.K. (1993), The nitrate contamination of private well water in Iowa. *American Journal of Public Health*, **83** (2), 270-272.

Full Text: [A\Ame J Pub Hea83, 270.pdf](A/Ame%20J%20Pub%20Hea83,%20270.pdf)

Abstract: The State-Wide Rural Well-Water Survey was conducted between April 1988 and June 1989. About 18% of Iowa’s private, rural drinking-water wells contain nitrate above the recommended health advisory level (levels of NO3-N greater than 10 mg/L); 37% of the wells have levels greater than 3 mg/L, typically considered indicative of anthropogenic pollution. Thirty-five percent of wells less than 15 m deep exceed the health advisory level, and the mean concentration of nitrate-nitrogen for these wells exceeds 10 mg/L. Depth of well is the best predictor of well-water contamination. Individually, NO3-N levels of more than 10 mg/L occurred alone in about 4% of the private wells statewide; pesticides were present alone in about 5%. Total coliform positives occurred alone at 27% of the sites. In a cumulative sense, these three contaminants were detected in nearly 55% of rural private water supplies.

Suarez-Almazor, M.E., Flowerdew, G., Saunders, L.D., Soskolne, C.L. and Russell, A.S. (1993), The fluoridation of drinking water and hip fracture hospitalization rates in two Canadian communities. *American Journal of Public Health*, **83** (5), 689-693.

Full Text: [A\Ame J Pub Hea83, 689.pdf](A/Ame%20J%20Pub%20Hea83,%20689.pdf)

Abstract: OBJECTIVES. The purpose of this study was to compare hip fracture hospitalization rates between a fluoridated and a non-fluoridated community in Alberta, Canada: Edmonton, which has had fluoridated drinking water since 1967, and Calgary, which considered fluoridation in 1991 but is currently revising this decision.

METHODS. Case subjects were all individuals aged 45 years or older residing in Edmonton or Calgary who were admitted to hospitals in Alberta between January 1, (1981), and December 31, (1987), and who had a discharge diagnosis of hip fracture. Edmonton rates were compared with Calgary rates, with adjustment for age and sex using the Edmonton population as a standard.

RESULTS. The hip fracture hospitalization rate for Edmonton from 1981 through 1987 was 2.77 per 1000 person-years. The age-sex standardized rate for Calgary was 2.78 per 1000 person-years. No statistically significant difference was observed in the overall rate, and only minor differences were observed within age and sex subgroups, with the Edmonton rates being higher in males.

CONCLUSIONS. These findings suggest that fluoridation of drinking water has no impact, neither beneficial nor deleterious, on the risk of hip fracture.

Koivusalo, M., Jaakkola, J.J., Vartiainen, T., Hakulinen, T., Karjalainen, S., Pukkala, E. and Tuomisto, J. (1994), Drinking water mutagenicity and gastrointestinal and urinary tract cancers: An ecological study in Finland [see comments]. *American Journal of Public Health*, **84** (8), 1223-1228.

Full Text: [A\Ame J Pub Hea84, 1223.pdf](A/Ame%20J%20Pub%20Hea84,%201223.pdf)

Abstract: OBJECTIVES. The purpose of this study was to investigate the relationship between exposure to mutagenic drinking water and cancers of the gastrointestinal and urinary tract.

METHODS. Past exposure to drinking water mutagenicity was assessed in 56 Finnish municipalities for the years 1955 and 1970. The cases of bladder, kidney, stomach, colon, and rectum cancers were derived from two periods (1967 to 1976 and 1977 to 1986). Age, sex, social class, urban living, and time period were taken into account in the Poisson regression analysis.

RESULTS. Statistically significant exposure-response association was observed between exposure and incidence of bladder, kidney, and stomach cancers. In an ordinary municipality using chlorinated surface water, this exposure would indicate a relative risk of 1.2 for bladder cancer and of 1.2 to 1.4 for kidney cancer compared with municipalities where nonmutagenic drinking water was consumed.

CONCLUSIONS. The acidic mutagenic compounds present in drinking water may play a role in the etiology of kidney and bladder cancers, but, because the results are based on aggregate data, they should be interpreted with caution.

Field, R.W., Fisher, E.L., Valentine, R.L. and Kross, B.C. (1995), Radium-bearing pipe scale deposits: Implications for national waterborne radon sampling methods. *American Journal of Public Health*, **85** (4), 567-570.

Full Text: [A\Ame J Pub Hea85, 567.pdf](A/Ame%20J%20Pub%20Hea85,%20567.pdf)

Abstract: A point-of-use waterborne radon-222 (222Rn) survey of a small Iowa town was performed to determine the cause of unnaturally high waterborne 222Rn concentrations in the municipality. The source of the elevated 222Rn concentrations was a newly discovered reservoir of waterborne 222Rn originating from distribution-system radium-226 (226Ra) adsorbed internal pipe scale deposits. Because the proposed national drinking water regulations for 222Rn require sampling at the origin of the distribution system rather than at the point of use, the proposed scheme for collection of water samples may not represent actual consumer waterborne 222Rn exposure in all cases.

Riley, T.J., Cauley, J.A. and Murphy, P.A. (1995), Water chlorination and lipo-and apolipoproteins: The relationship in elderly white women of western Pennsylvania. *American Journal of Public Health*, **85** (4), 570-573.

Full Text: [A\Ame J Pub Hea85, 570.pdf](A/Ame%20J%20Pub%20Hea85,%20570.pdf)

Abstract: The relationship between consumption of chlorinated drinking water in the home water supply and serum lipids was examined in 2070 elderly White women. Private springs, cisterns, and wells were considered nonchlorinated and public water sources, chlorinated. Mean serum lipids and lipoproteins were similar in the chlorinated and nonchlorinated groups. Stratification by years of exposure revealed little difference in lipid concentrations. Lifestyle factors--for example, smoking and alcohol consumption--differed by years of exposure. Hence, previous reports of an association between chlorinated drinking water and serum cholesterol levels may reflect inadequate control of other factors differentially distributed across chlorinated exposure groups.

Levallois, P. and Ayotte, P. (1995), Assessing exposure to carcinogens in drinking water. *American Journal of Public Health*, **85** (9), 1298-1300.

Full Text: [A\Ame J Pub Hea85, 1298.pdf](A/Ame%20J%20Pub%20Hea85,%201298.pdf)

Keywords: Cancer, Trihalomethanes

Howland, J., Hingson, R., Mangione, T.W., Bell, N. and Bak, S. (1996), Why are most drowning victims men? Sex differences in aquatic skills and behaviors. *American Journal of Public Health*, **86** (1), 93-96.

Full Text: [A\Ame J Pub Hea86, 93.pdf](A/Ame%20J%20Pub%20Hea86,%2093.pdf)

Abstract: Men have higher drowning rates than women for most age groups. Data from a 1991 national household survey (n = 3042) on aquatic activities were used to examine hypotheses about differential drowning rates by sex. Men and women were compared by (1) exposure to aquatic environments; (2) frequency of aquatic activities involving or potentially involving, submersion; (3) swimming training and ability; (4) aquatic risk-taking behaviors; and (5) alcohol use on or near the water. Men had elevated risks for exposure, risk taking, and alcohol use. It was concluded that several factors contribute to their relatively high drowning rates, including a possible interaction between overestimation of abilities and heavy alcohol use.

Morris, R.D., Naumova, E.N., Levin, R., Munasinghe, R.L. (1996), Temporal variation in drinking water turbidity and diagnosed gastroenteritis in Milwaukee. *American Journal of Public Health*, **86** (2), 237-239.

Full Text: [A\Ame J Pub Hea86, 237.pdf](A/Ame%20J%20Pub%20Hea86,%20237.pdf)

Abstract: Daily counts of diagnosed gastroenteritis (gastrointestinal events) in Milwaukee County, Wisconsin, from January 1992 through April 1993 were compared with reported daily turbidity from the two drinking water treatment plants serving the county. Turbidity in both plants was associated with an increased number of gastrointestinal events even after exclusion of a major documented outbreak of cryptosporidiosis. During the 434-day period prior to the outbreak, an increase in turbidity of 0.5 nephelometric turbidity units at one of the plants was associated with relative risks for gastrointestinal events of 2.35 among children (95% confidence interval [CI] = 1.34, 4.12) and 1.17 among adults (95% CI = 0.91, 1.52).

Carr, S.J., Leahy, S.M., London, S., Sidhu, S. and Vogt, J. (1996), The public health response to Los Angeles’ 1994 earthquake. *American Journal of Public Health*, **86** (4), 589-590.

Full Text: [A\Ame J Pub Hea86, 589.pdf](A/Ame%20J%20Pub%20Hea86,%20589.pdf)

Campos-Outcalt, D., Prybylski, D., Watkins, A.J., Rothfus, G. and Dellapenna, A. (1997), Motor-vehicle crash fatalities among American Indians and non-Indians in Arizona, 1979 through 1988. *American Journal of Public Health*, **87** (2), 282-285.

Full Text: [A\Ame J Pub Hea87, 282.pdf](A/Ame%20J%20Pub%20Hea87,%20282.pdf)

Abstract: Objectives. This study evaluated the contributions of rural residence, alcohol use, and pedestrian fatalities to thr high American Indian motor-vehicle crash mortality rate in Arizona.

Methods. Records from the Fatal Accident Reporting System were used to examine mortality rates between 1979 and 1988.

Results. American Indians had increased relative risks in all motor-vehicle crash categories in all residence-gender groups. The percentage of excess mortality associated with alcohol varied from 36.8% to 66.7%, and the percentage associated with pedestrian deaths ranged from 27.2% to 55.4%.

Conclusions. Efforts to reduce excess motor-vehicle crash mortality among American Indians should concentrate on preventing pedestrian and alcohol-related fatalities.

Keywords: Native-Americans, New-Mexico, Accidents, Mortality, Deaths

Doyle, T.J., Zheng, W., Cerhan, J.R., Hong, C.P., Sellers, T.A., Kushi, L.H. and Folsom, A.R. (1997), The association of drinking water source and chlorination by-products with cancer incidence among postmenopausal women in Iowa: A prospective cohort study. *American Journal of Public Health*, **87** (7), 1168-1176.

Full Text: [A\Ame J Pub Hea87, 1168.pdf](A/Ame%20J%20Pub%20Hea87,%201168.pdf)

Abstract: OBJECTIVES: This study assessed the association of drinking water source and chlorination by-product exposure with cancer incidence.

METHODS: A cohort of 28, 237 Iowa women reported their drinking water source. Exposure to chlorination by-products was determined from statewide water quality data.

RESULTS: In comparison with women who used municipal ground-water sources, women with municipal surface water sources were at an increased risk of colon cancer and all cancers combined. A clear dose-response relation was observed between four categories of increasing chloroform levels in finished drinking water and the risk of colon cancer and all cancers combined. The relative risks were 1.00, 1.06, 1.39, and 1.68 for colon cancer and 1.00, 1.04, 1.24, and 1.25 for total cancers. No consistent association with either water source or chloroform concentration was observed for other cancer sites.

CONCLUSIONS: These results suggest that exposure to chlorination by-products in drinking water is associated with increased risk of colon cancer.

Chen, M.S. and Huang, C.L. (1997), Industrial workers health and environmental pollution under the new international division of labor: The Taiwan experience. *American Journal of Public Health*, **87** (7), 1223-1231.

Full Text: [A\Ame J Pub Hea87, 1223.pdf](A/Ame%20J%20Pub%20Hea87,%201223.pdf)

Abstract: Using Taiwan as an example, this paper conducts a historical analysis of the relationship between economic development in the new international division of labor and environmental pollution and industrial workers’ health. Three industries---asbestos, plastic and dye were chosen for case studies. We trace the emergence of each industry in Taiwan and study each industry’s protection of workers’ health and environmental quality. Under the new international division of labor, the state’s prioritization of economic development leads to lenient regulation. Under such state policies, employers have few incentives to invest in the protection of their workers health and in the control of environmental pollution. Workers and the public are constrained in their efforts to protect their own health and prevent environmental pollution. This situation is exemplified by the deplorable working conditions and inadequate environmental pollution controls in the asbestos, plastic and dye industries. Workers’ health and the public’s health are greatly compromised by economic development in the new international division of labor.

Weissman, A.M. (1997), Bottled water use in an immigrant community: A public health issue? *American Journal of Public Health*, **87** (8), 1379-1380.

Full Text: [1997\Ame J Pub Hea87 1379.pdf](1997/Ame%20J%20Pub%20Hea87%201379.pdf)

Hoxie, N.J., Davis, J.P., Vergeront, J.M., Nashold, R.D. and Blair, K.A. (1997), Cryptosporidiosis-associated mortality following a massive waterborne outbreak in Milwaukee, Wisconsin. *American Journal of Public Health*, **87** (12), 2032-2035.

Full Text: [A\Ame J Pub Hea87, 2032.pdf](A/Ame%20J%20Pub%20Hea87,%202032.pdf)

Abstract: OBJECTIVES: This study estimated the magnitude of cryptosporidiosis-associated mortality in the Milwaukee vicinity for 2 years following a massive waterborne outbreak.

METHODS: Death certificates were reviewed.

RESULTS: During approximately 2 years before the outbreak, cryptosporidiosis was listed as an underlying or contributing cause of death on the death certificates of four Milwaukee-vicinity residents. In the approximately 2 years after the outbreak, this number was 54, of whom 85% had acquired immunodeficiency syndrome (AIDS) listed as the underlying cause of death. In the first 6 months after the outbreak, the number of death certificates indicating AIDS, but not cryptosporidiosis, as a cause of death was 19 (95% confidence interval = 12.26) higher than preoutbreak trends would have predicted.

CONCLUSIONS: Waterborne outbreaks of *Cryptosporidium* infection can result in significant mortality, particularly among immunocompromised populations. Any discussion of policies to ensure safe drinking water must consider the potential fatal consequences of waterborne cryptosporidiosis among immunocompromised populations.

Nelson, D.E., Bolen, J. and Kresnow, M.J. (1998), Trends in safety belt use by demographics and by type of state safety belt law, 1987 through 1993. *American Journal of Public Health*, **88** (2), 245-249.

Full Text: [A\Ame J Pub Hea88, 245.pdf](A/Ame%20J%20Pub%20Hea88,%20245.pdf)

Abstract: Objectives. This study examined trends in safety belt use by age, sex, race/ethnicity, education, and type of safety belt law Methods. We analyzed Behavioral Risk Factor Surveillance System data on safety belt use from 33 states for 1987 through 1993 and used linear regression models to determine trends in prevalence.

Results. Asian/Pacific Islanders and Hispanics had the highest safety belt use among racial/ethnic groups. Prevalence varied little from age 25 through 64 years in all years, but averaged 25 percentage points higher in states with primary laws than in states with no belt laws. Overall safety belt use increased by an average of 2.7±0.1 percentage points per year and varied little across most demographic groups, but there was no significant increase for Black males aged 18 through 29 years.

Conclusions. The generally consistent increase in safety belt use across demographic groups is in sharp contrast to trends in other health-risk behaviors. States should enact primary safety belt laws and focus safety belt use efforts towards young Black males.

Keywords: Seat-Belt, United-States, Drivers, Health

Bonilla, C.M. and Mauss, E.A. (1998), A community-initiated study of blood lead levels of Nicaraguan children living near a battery factory. *American Journal of Public Health*, **88** (12), 1843-1845.

Full Text: [A\Ame J Pub Hea88, 1843.pdf](A/Ame%20J%20Pub%20Hea88,%201843.pdf)

Abstract: Objectives. In response to requests by parents in Managua, Nicaragua, whose neighborhood borders a battery factory, 97 children were tested for blood lead, as were 30 children in a neighborhood without an obvious source of environmental lead.

Methods. Venous blood was examined by atomic absorption spectrophotometry. Educational workshops were conducted.

Results. Mean blood lead Levels were 17.21±9.92 μg/dL in the index children and 7.40±5.37 μg/dL in the controls (P < .001).

Conclusions. Children living near the battery factory are at increased risk of lead poisoning. The parents were able to petition the government to control the factory emissions and to improve appropriate health services. The factory is now closed.

Keywords: Exposure

Waldman, R. and Martone, G. (1999), Public health and complex emergencies: New issues, new conditions. *American Journal of Public Health*, **89** (10), 1483-1485.

Full Text: [A\Ame J Pub Hea89, 1483.pdf](A/Ame%20J%20Pub%20Hea89,%201483.pdf)

Abstract: Public health practice in complex emergencies has become increasingly sophisticated and well informed over the course of the past quarter century. Humanitarian relief organizations have learned many lessons in the areas of food, water and sanitation, shelter, and primary health. However, closer scrutiny from the media and funding agencies? together with changing conditions and an increasingly insecure environment, will require that changes be made. First and foremost, nongovernmental organizations must recognize that an increasing proportion of morbidity and mortality is the consequence of widespread human rights abuses. These organizations should become more familiar with international human rights and humanitarian law, and their personnel should receive clear guidance as to how to recognize and report violations. At the same time, non-governmental organizations will have to work more closely with military forces that have a very different organizational culture. In addition, as emergencies become more complex, nongovernmental organizations should do more to attract and retain seasoned professionals. Finally, advances in both technical and operational areas will occur only through carefully designed and implemented research.

Almeida-Filho, N., Kawachi, I., Pellegrini, A. and Dachs, J.N.W. (2003), Research on health inequalities in Latin America and the Caribbean: Bibliometric analysis (1971-2000) and descriptive content analysis (1971-1995). *American Journal of Public Health*, **93** (12), 2037-2043.

Full Text: [2003\Ame J Pub Hea93, 2037.pdf](2003/Ame%20J%20Pub%20Hea93,%202037.pdf)

Abstract: We conducted a bibliometric and content analysis of research on health inequalities produced in Latin American and Caribbean countries. In our bibliometric analysis (n = 576), we used indexed material published between 1971 and 2000. The content analysis (n = 269) covered the period 1971 to 1995 and included unpublished material.

We found recent rapid growth in overall output. Brazil, Chile, and Mexico contributed mostly empirical research, while Ecuador and Argentina produced more conceptual studies.

We found, in the literature reviewed, a relative neglect of gender, race, and ethnicity issues. We also found remarkable diversity in research designs, however, along with strong consideration of ecological and ethnographic methods absent in other research traditions.

Keywords: Bibliometric, Bibliometric Analysis, Brazil, Chile, Content Analysis, Countries, Growth, Latin America, Literature, Mexico, Research, Social Medicine

? Rock, M. (2005), Diabetes portrayals in north American print media: A qualitative and quantitative analysis. *American Journal of Public Health*, **95** (10), 1832-1838.

Full Text: [2005\Ame J Pub Hea95, 1832.pdf](2005/Ame%20J%20Pub%20Hea95,%201832.pdf)

Abstract: Objectives. This study investigated how media coverage has portrayed diabetes as newsworthy. Methods. The quantitative component involved tabulating diabetes coverage in 2 major Canadian newspapers, 1988-2001 and 1991-2001. The qualitative component focused on high-profile coverage in 2 major US magazines and 2 major Canadian newspapers, 1998-2000. Results. Although coverage did not consistently increase, the quantitative results suggest an emphasis on linking diabetes with heart disease and mortality to convey its seriousness. The qualitative component identified 3 main ways of portraying type 2 diabetes: as an insidious problem, as a problem associated with particular populations, and as a medical problem. Conclusions. Overall, the results suggest that when communicating with journalists, researchers and advocates have stressed that diabetes maims and kills. Yet even when media coverage acknowledged societal forces and circumstances as causes, the proposed remedies did not always include or stress modifications to social contexts. Neither the societal causes of public health problems nor possible societal remedies automatically received attention from researchers or from journalists. Skilled advocacy is needed to put societal causes and solutions on public agendas.

Keywords: Advocacy, Analysis, Coverage, Diabetes, Health, Heart, Journalists, Media, Medical, Mortality, Populations, Public, Public Health, Qualitative, Quantitative Analysis, Social, Solutions, Stress, Type 2 Diabetes, US

# Title: American Journal of Public Health and the Nations Health

Full Journal Title: American Journal of Public Health and the Nations Health

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kaplan, E. and Shaull, R.S. (1961), Determination of lead in paint scrapings as an aid in control of lead paint poisoning in young-children. *American Journal of Public Health and the Nations Health*, **51** (1), 65-69.

Full Text: [1960-80\Ame J Pub Hea Nat Hea51, 65.pdf](1960-80/Ame%20J%20Pub%20Hea%20Nat%20Hea51,%2065.pdf)

# Title: American Journal of Respiratory and Critical Care Medicine

Full Journal Title: [American Journal of Respiratory and Critical Care Medicine](http://ajrccm.atsjournals.org/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1073-449X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Hoppin, Jr., F.G. (2002), How I review an original scientific article? *American Journal of Respiratory and Critical Care Medicine*, **166** (8), 1019-1023.

Full Text: [2002\Ame J Res Cri Car Med166, 1019.pdf](2002/Ame%20J%20Res%20Cri%20Car%20Med166,%201019.pdf)

Keywords: Peer, Quality

? Tobin, M.J. (2004), Thirty years of impact factor and the journal. *American Journal of Respiratory and Critical Care Medicine*, **170** (4), 351-352.

Full Text: [2004\Ame J Res Cri Car Med170, 351.pdf](2004/Ame%20J%20Res%20Cri%20Car%20Med170,%20351.pdf)

Keywords: Impact, Impact Factor

# Title: American Journal of Rhinology

Full Journal Title: American Journal of Rhinology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Dalziel, K., Stein, K., Round, A., Garside, R. and Royle, P. (2006), Endoscopic sinus surgery for the excision of nasal polyps: A systematic review of safety and effectiveness. *American Journal of Rhinology*, **20** (5), 506-519.

Abstract: Background: Functional endoscopic sinus surgery (FESS) has been used for > 20 years for the management of sinus disease including the excision of nasal polyps. Our objective was to perform a systematic review of safety and effectiveness of FESS for the removal of nasal polyps. Methods: The Cochrane Library, MEDLINE, Embase, Science Citation Index, other databases, and websites were searched in January and December 2005 using key words for nasal polyps and endoscopic surgery. All randomized controlled trials, nonrandomized comparative studies, and case series studies that described outcomes associated with FESS for the excision of nasal polyps were included. Forty-two publications were included from the 632 (6.6%) articles initially identified. Two reviewers assessed validity of included,studies and extracted relevant data. Results: Three randomized controlled trials, 4 nonrandomized comparative studies, and 35 case series studies were included in the review. FESS was compared with endoscopic polypectomy, Caldwell-Luc, radical nasalization, and intranasal ethmoidectomy. In general, studies were of poor quality and lacked description of important variables influencing surgical outcome. Overall complications for FESS from case series studies ranged from 0.3 to 22.4% (median, 7.0%). Major complications ranged from 0 to 1.5% (median, 0%) and minor complications ranged from 1.1 to 20.8% (median, 7.5%). The potentially most serious complications were cerebrospinal fluid leaks, injury to the internal carotid artery, dural exposure, meningitis, bleeding requiring transfusion, periorbital/orbital fat exposure, and orbital penetration. Symptomatic improvement ranged from 78 to 88% for FESS compared with 43 to 84% for comparative procedures. From case series, symptomatic improvement ranged from 40 to 98% (median, 88%). Conclusion: FESS may offer some advantages in safety and effectiveness over comparative techniques, but wide variation in reported results and methodological shortcomings of studies limit the certainty of these conclusions. Wide variation in complication rates suggests the need for audit of existing practice. Additional high-quality studies with a fuller description of potential confounding factors and effect modifiers will help to define the effectiveness of FESS more clearly.

Keywords: Articles, Case Series, Chronic Rhinosinusitis, Citation, Complications, Databases, Diffuse, Effectiveness, Follow-up, Intranasal Ethmoidectomy, Management, Medline, Mucosa, Operation, Outcomes, Publications, Rates, Removal, Review, Science, Science Citation Index, Surgery, Systematic Review, Techniques, Validity

# Title: American Journal of Roentgenology

Full Journal Title: [American Journal of Roentgenology](http://www.ajronline.org/)

ISO Abbreviated Title: Am. J. Roentgenol.

JCR Abbreviated Title: Am J Roentgenol

ISSN: 0361-803X

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Roentgen Ray Soc

Publisher Address: 1891 Preston White Dr, Subscription Fulfillment, Reston, VA 22091

Subject Categories:

Radiology, Nuclear Medicine & Medical Imaging: Impact Factor 1.998, (2001)

? Allan, N.K. (1979), Uniform requirements for manuscripts submitted to biomedical journals. *American Journal of Roentgenology*, **133** (3), 564.

Full Text: -1959\Ame J Roe133, 564.pdf

? Kaude, J.V., Williams, C.M., Millner, M.R., Scott, K.N. and Finlayson, B. (1985), Renal morphology and function immediately after extracorporeal shock-wave lithotripsy. *American Journal of Roentgenology*, **145** (2), 305-313.

Full Text: [1985\Ame J Roe145, 305.pdf](1985/Ame%20J%20Roe145,%20305.pdf)

? Chew, F.S. and Relyeachew, A. (1988), How research becomes knowledge in radiology: An analysis of citations to published papers. *American Journal of Roentgenology*, **150** (1), 31-37.

Full Text: [1988\Ame J Roe150, 31.pdf](1988/Ame%20J%20Roe150,%2031.pdf)

? Chew, F.S. (1988), AJR - the 50 most frequently cited papers in the past 50 years. *American Journal of Roentgenology*, **150** (2), 227-233.

Full Text: [1988\Ame J Roe150, 227.pdf](1988/Ame%20J%20Roe150,%20227.pdf)

? Armstrong, J.D. (1993), Plagiarism - What is it, whom does it offend, and how does one deal with it. *American Journal of Roentgenology*, **161** (3), 479-484.

Full Text: [1993\Ame J Roe161, 479.pdf](1993/Ame%20J%20Roe161,%20479.pdf)

Abstract: Academic plagiarism is a thorny ethical and practical problem. Perhaps readers have never personally encountered or recognized a case of plagiarism so its immediate interest and relevance may be obscure. A short case history may provide evidence that the issue of plagiarism is germane to the contemporary academic endeavor. A young university radiologist recognized his own writing in a professional journal under another’s authorship, without attribution to himself, and had no idea what to do about it. He finally wrote to the author of the article who answered something to the effect that it was indeed a “remarkable coincidence” and that “great minds think alike.” Unsatisfied with the response, he considered reporting the matter to the journal editor, but he was a junior faculty member while the plagiarist was a revered figure in his subspecialty. He chose not to pursue the issue further because he was afraid that the plagiarist would harm him professionally [1].

Keywords: Publication

? Elster, A.D. and Chen, M.Y.M. (1994), The Internationalization of the *American Journal of Roentgenology*: 1980-1992. *American Journal of Roentgenology*, **162** (3), 519-522.

Full Text: [1994\Ame J Roe162, 519.pdf](1994/Ame%20J%20Roe162,%20519.pdf)

Abstract: OBJECTIVE, The purpose of this study was to determine whether significant changes have occurred in the number of foreign articles published in the American Journal of Roentgenology since 1980. MATERIALS AND METHODS, A total of 3398 articles published in AJR during two 3-year periods (1980-1982 and 1990-1992) were classified by type, subject, radiologic technique, organ system, and national origin. Additionally, 2865 manuscripts submitted to AJR from 1990 to 1992 were analyzed to determine the probability of manuscript acceptance based on country of origin. RESULTS. From 1980 to 1982, 158 (10%) of 1610 articles published in AJR originated from institutions outside the United States. By 1990-1992, international articles accounted for 441 (25%) of 1788 published papers (p < .00001). Although the total number of published articles from most nations increased during the decade, Korea, Japan, and Germany made the largest advances. International contributions in the 1990s were most numerous in the following areas: adult radiology, abdominal/gastrointestinal imaging, pulmonary/thoracic imaging, sonography, and interventional radiology. Notwithstanding these trends, manuscripts submitted from international sources are somewhat less likely to be accepted for publication than those originating from the United States (acceptance rate for major papers 27% vs 33%, p = .01). CONCLUSION. The American Journal of Roentgenology is becoming increasingly internationalized, with Korea, Japan, and Germany making particularly striking advances in the past decade.

Keywords: Acceptance, Adult, Advances, Changes, Country, Country of Origin, Germany, Institutions, International, Japan, Korea, Methods, Nations, Origin, Papers, Publication, Purpose, Radiology, Sonography, Sources, Trends, United States

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Full Text: [1994\Ame J Roe163, 719.pdf](1994/Ame%20J%20Roe163,%20719.pdf)

Abstract: OBJECTIVE. Errors in reference citation and use are common in the medical and scientific literature. The prevalence of such errors in the radiology literature has not been reported. We did a study to assess the accuracy and appropriateness of use of references cited in two general radiology journals. MATERIALS AND METHODS. All references cited in the June 1993 issues of the American Journal of Roentgenology and Radiology were numbered consecutively. Fifty references were chosen at random from each journal, and copies of the original publications were obtained from the medical library at our institution or through interlibrary loan. Each reference was studied for accuracy and appropriateness of its citation in the June 1993 journal article (the “index article”). Errors were classified as major or minor in each category. Data were analyzed with the SAS statistical package. RESULTS. Forty-seven (94%) of 50 references were obtained from AJR, and 48 (96%) of 50 from Radiology. of the 47 from the AJR, one (2%) had a major error and 21 (45%) had a minor error in accuracy. of the 48 from Radiology, two (4%) had a major error and 11 (23%) had a minor error in accuracy. These Values were significantly different for minor errors (p = .0188), but not for major ones (p = 1.000). When we adjusted for index article type, error rates for the two journals were not significantly different (p = .0612). We found four major errors (9%) and two minor errors (4%) in appropriateness of citation in the AJR references we studied. Three references (6%) from Radiology contained major errors in appropriateness of use; we found no minor errors of that type. These values were not significantly different (p = .232 for minor errors; p = .709 for major errors). One error in accuracy prevented location of the original reference. Errors were not related to the number of references cited in an index article (p = .528 for accuracy; p = .092 for appropriateness). CONCLUSION. The rate of minor errors in accuracy of references is fairly high in the two journals studied and is comparable to rates previously reported for other types of journals. The rate of major errors in accuracy of references is slightly lower than rates for other types of journals. The percentage of cited references that could not be located was also smaller than in previous reports. Errors in citation appropriateness were less common as well. Given the small number of errors that prevented references from being located, significant expenditure of time and money by journal staff members in checking references is probably not justified. However, authors should be encouraged to exercise greater care in checking all of their references for both accuracy and appropriateness of use. Differences in error rates between AJR and Radiology may have resulted in part from the random sampling method, which produced different mixtures of index articles for the two journals.

Keywords: Accuracy, Care, Citation, Error, Errors, Exercise, General, Index, Journal, Journal Article, Journals, Literature, Location, Medical, Methods, Minor, Prevalence, Publications, Radiology, Rates, Sampling, Scientific Literature, Small

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Full Text: [1996\Ame J Roe166, 517.pdf](1996/Ame%20J%20Roe166,%20517.pdf)

Abstract: Multiple-reader study designs have become popular in the radiology literature. We reviewed the major papers published in the American Journal of Roentgenology in the first 4 months of each of the years 1990 and 1995. The review was restricted to prospective studies of image interpretation. In the 1990 literature, we noted eight multiple-reader and 18 single-reader studies; in contrast, in the 1995 literature, we found 29 multiple-reader and eight single-reader studies. This trend reflects an increased awareness of the importance of multiple-reader studies. We examined the Results sections of the 29 multiple-reader studies from 1995 to assess the authors’ motives for incorporating such a design. In 16 studies (55%), readers independently interpreted all images. However, the authors usually reported only the average interpretation of the readers; in only seven of the 29 studies (24%) did the authors describe differences among readers’ interpretations. In 13 studies, interpretations were performed exclusively through “consensus reading.” The method(s) used to achieve a consensus often were not explained. Only two of the 29 studies had more than three readers. In contrast, all of these studies included multiple patients. The average patient sample size was 45. Furthermore, differences observed among patients were routinely reported and/or depicted.

Keywords: Consensus, Design, First, Literature, Papers, Patients, Prospective, Prospective Studies, Radiology, Review, Sample Size, Size, Trend

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Full Text: [2002\Ame J Roe178, 541.pdf](2002/Ame%20J%20Roe178,%20541.pdf)

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Full Text: Ame J Roe180, 1247

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Full Text: Ame J Roe180, 1376

Chen, M.Y., Jenkins, C.B. and Elster, A.D. (2003), Internationalization of the *American Journal of Roentgenology*: 1980-2002. *American Journal of Roentgenology*, **181** (4), 907-912.

Full Text: [2003\Ame J Roe181, 907.pdf](2003/Ame%20J%20Roe181,%20907.pdf)

Abstract: Objective. The objective of this study was to analyze trends in the number of articles from international authors submitted to or published by the American Journal of Roentgenology (AJR) between 1980 and 2002.

Materials and Methods. More than 5000 articles published by the AJR during three 3-year periods (1980-1982, 1990-1992, and 2000-2002) were categorized by country of residence of the corresponding author, type of article, subject matter and age of patients, organ system, and radiologic technique. Additionally, 6202 manuscripts submitted to the AJR (19911992 and 2001-2002) were used to calculate the acceptance rates for the two 2-year periods.

Results. The percentage of articles published by the AJR from international authors was 10% (158/1610) in 1980-1982, 25% (441/1788) in 1990-1992, and 37% (602/1624) in 2000-2002 (p<0.0001). Japanese, South Korean, and German authors achieved the largest increases during the 22 years covered by our research, and Canada had the largest decrease. The increase in international articles at the AJR was accompanied by an absolute decrease in publications from authors in the United States. Nonetheless, during 2000-2002, the acceptance rate for major papers from authors in the United States was 45% and the acceptance rate for foreign authors was 31%. During 1990-1992, the acceptance rates for major papers were 33% and 27%, respectively.

Conclusion. The contents of the AJR reflect a continually increasing number of international. articles during the past two decades.

Keywords: AJR

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Full Text: [2005\Ame J Roe185, 597.pdf](2005/Ame%20J%20Roe185,%20597.pdf)

Keywords: Computed-Tomography, Diagnosis

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Full Text: [2006\Ame J Roe186, 3.pdf](2006/Ame%20J%20Roe186,%203.pdf)

Keywords: Abdominal Abscesses, AJR Centennial, Arterial Occlusions, Articles, Computed-Tomography, Contrast-Media, Digital Subtraction, Education, Gadolinium-Dtpa Complex, History, MR-Angiography, Needle Aspiration Biopsy, Publishing, Pulmonary-Embolism, Radiation-Therapy, Research

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Full Text: 2011\Ame J Roe196, 1065.pdf

Abstract: OBJECTIVE. The objective of our study was to assess the incremental role of CT venography (CTV) combined with pulmonary CT angiography (CTA) in detecting venous thromboembolic disease with a systematic review and meta-analysis of the literature. MATERIALS AND METHODS. MEDLINE, Embase, and Web of Science were searched for relevant original articles published from January 1, 1995, to December 31, 2009. A random-effects model was used to obtain the incremental value of CTV in detecting thromboembolic disease. RESULTS. Twenty-four studies, which included 17,373 patients, met our inclusion criteria. A meta-analysis showed that CTV increased detection rates of venous thromboembolic disease by identifying an additional 3% of cases (95% CI, 2-4%) of isolated deep venous thrombosis (DVT). A subgroup analysis of a high-risk group did not show any difference in the detection of isolated DVT. CONCLUSION. The addition of CTV results in the increased detection of thromboembolic disease. CTV combined with pulmonary CTA has a promising role as a quick and efficient test for venous thromboembolism.

Keywords: Analysis, Care-Unit Patients, Clinically Sound Treatment, Computed-Tomography Venography, CT, Deep Vein Thrombosis, Deep Venous Thrombosis, Diagnostic Pathways, Disease, Emergency-Departments, Interobserver Agreement, Literature, Medline, Meta-Analysis, Model, Pioped-II Investigators, Pulmonary Embolism, Review, Science, Search Strategies, Systematic, Systematic Review, Thrombosis, Vein Thrombosis, Venous Thromboembolic Disease, Venous Thrombosis, Web of Science

# Title: American Journal of Science

Full Journal Title: [American Journal of Science](http://www.ajsonline.org/archive/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0002-9599

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

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Full Text: [-1959\Ame J Sci9, 397.pdf](-1959/Ame%20J%20Sci9,%20397.pdf)

Keywords: Diffusion, Water

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Full Text: [-1959\Ame J Sci16, 381.pdf](-1959/Ame%20J%20Sci16,%20381.pdf)

Abstract: Gold precipitated by barium compounds from colloidal solutions does not carry down any appreciable quantity of barium salt, whether the gold be obtained in the spongy or the blue form, nor are adsorption phenomena pronouncedly concerned, if at all, in the colour changes brought about in red gold solutions by electrolytes.

Keywords: Adsorption, Gold

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Full Text: [-1959\Ame J Sci24, 199.pdf](-1959/Ame%20J%20Sci24,%20199.pdf)

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Full Text: [-1959\Ame J Sci30, 65.pdf](-1959/Ame%20J%20Sci30,%2065.pdf)

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Full Text: [-1959\Ame J Sci41, 532.pdf](-1959/Ame%20J%20Sci41,%20532.pdf)

Abstract: Many experiments on the growth of crystals under different conditions have been carried out, some of the principal results and the conclusions derived from them being as follows:- When two crystals, similarly placed in a saturated solution, are subjected to unequal pressures, the system is in unstable equilibrium. Thus, a solution may become supersaturated with respect to a crystal placed under a relatively low pressure, while at the same time it tends to dissolve a crystal under a greater pressure; this probably explains why Bruhns and Mecklenburg (1913) failed to get the results obtained by Becker and Day (1905). These results are confirmed by the author, who finds that under certain conditions the growth of crystals may be accompanied by the development of a linear force. Whenever a measurable lifting of a weight took place, it ft-as found at the close of the experiment that the crystal had a terraced cavity or hollow on its under side, even when the initial faces of the crystal were plane. Moreover, measurements show that the distances through which weights are lifted by growing crystals are always the same as the amounts by which their hollows are deepened. Experiments with weighted and unweighted crystals prove: (1) that a growing crystal resting on a smooth surface can raise itself, and even a considerable additional load, by building downwards the advancing outward edge of the crystal; (2) that no material is deposited on the under side of the crystal except along the advancing outer edge; and (3) that the cavities are not formed by solution, but are due to the downward growth of the outer edge, while at the same time no material is being deposited on the under surface within its outer edge. All the results obtained support the theory that a crystal grows only through the addition of layers of material from without; when crystals grow in contact with glass surfaces, a thin layer or film of solution always exists between the crystal and the glass, the presence of this film being due to capillary attraction and adsorption. The area of contact between a crystal and the supporting surface is under greater pressure than the rest of the crystal, and since the solubility of most substances in aqueous solutions increases with the pressure, the supporting surface has a greater solubility than the other parts of the crystal. The degree of concentration necessary for growth ia, therefore, greater at the base than elsewhere, and increases with any increase in the weight supported per unit area of the supporting surface. Adsorption may help in some slight degree to increase the concentration of the layer of solution in contact with the bottom of the dish, but it cannot be the direct cause of the upward pressure developed by crystals, since otherwise the presence of unweighted crystals in the same dish with weighted crystals would not prevent the upward growth of the latter; this conclusion is supported by the absence of appreciable hollows on the upper surface of crystals grown under heavy weights or even under glass plates weighing only 0.17 gm. The application of these results to geological phenomena is discussed.

Keywords: Adsorption, Aqueous Solutions, Development, Equilibrium, Growth, Solubility, Solution, Theory

Notes: highly cited

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Full Text: [1981\Ame J Sci281, 735.pdf](1981/Ame%20J%20Sci281,%20735.pdf)

Notes: highly cited

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Full Text: [1981\Ame J Sci281, 788.pdf](1981/Ame%20J%20Sci281,%20788.pdf)

# Title: American Journal of Sociology

Full Journal Title: American Journal of Sociology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

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Full Text: [1960-80\Ame J Soc74, 276.pdf](1960-80/Ame%20J%20Soc74,%20276.pdf)

Abstract: With increasing scientific collaboration, visibility of individual role-performance has diminished. Ordering of authors’ names is an adaptive device which symbolizes their relative contributions to research. Interviews with Nobel laureates and comparisons of their name-order practices to those of other scientists suggest that this symbol is ambiguous and makes evaluation of individual role-performance difficult. A probability model of expected distributions of name orders is used in measuring preferences for particular sequences, and these preferences vary with the authors’ eminence. On the assumption that authors’ names are listed in order of the value of their contributions, laureates should be first-authors more often than other scientists; in fact, they are not. Instead, they exercise their noblesse oblige by giving credit to less eminent co-workers increasingly as their eminence grows. They do so more often after the prize, and eminent laureates-to-be forego first-authorship more often than those as yet unrecognized. This noblesse oblige, however, has its limits; laureates’ contributions to prize-winning research are more visible than contributions to their other research.

# Title: American Journal of Sports Medicine

Full Journal Title: American Journal of Sports Medicine

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

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Full Text: [2010\Ame J Spo Med38, 2391.pdf](2010/Ame%20J%20Spo%20Med38,%202391.pdf)

Keywords: Duplicate Publication, Editors, Plagiarism

# Title: American Journal of Surgery

Full Journal Title: [American Journal of Surgery](http://www.sciencedirect.com/science/journal/00029610)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

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Full Text: [1960-80\Ame J Sur106, 114.pdf](1960-80/Ame%20J%20Sur106,%20114.pdf)

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Full Text: [2000\Ame J Sur179, 309.pdf](2000/Ame%20J%20Sur179,%20309.pdf)

Abstract: BACKGROUND: The advent of laparoscopic cholecystectomy (LC) has created a dilemma for treating patients with known or suspected choledocholithiasis, With rapid technologic growth and experience in laparoscopic skills, many surgeons are now routinely performing laparoscopic common bile duct exploration (LCBDE) and questioning the wisdom of preoperative endoscopic retrograde cholangiography (ERC) with or without endoscopic sphincterotomy. The purpose of this article is to review the current literature on the subject of LCBDE and critically evaluate the clinical results of this emerging technology. METHODS: Medline and Science Citation Index databases were used to search English language articles published on LCBDE since 1989, RESULTS: Transcystic common bile duct exploration has a better clearance rate, and carries less morbidity and mortality compared with laparoscopic choledochotomy. Compared with two-stage ERCP and LC, one-stage LC and LCBDE seems to be associated with a shorter hospital stay, a quicker recovery, less expense, and less morbidity and mortality. CONCLUSIONS: LCBDE is a feasible, safe and effective procedure that carries a low morbidity and mortality and will decrease the need for unnecessary ERC in the future for suspected or proved choledocholithiasis, Am J Surg. 2000;179:309-315, (C) 2000 by Excerpta Medica, Inc.

Keywords: Antegrade Sphincterotomy, Articles, Calculi, Cholecystectomy, Choledocholithiasis, Choledochoscopy, Citation, Databases, Endoscopic Sphincterotomy, English, Follow-up, Growth, Language, Literature, Management, Medline, Randomized Trial, Recovery, Review, Science, Science Citation Index, Stones, Technology

# Title: American Journal of Therapeutics

Full Journal Title: [American Journal of Therapeutics](http://ovidsp.uk.ovid.com/sp-2.3/ovidweb.cgi?QS2=434f4e1a73d37e8c55ee654abafc9a936733407cbee9e50245056a0f390ad7183f7405c82794ce46a3974eaf386883fe836b4fec070951fd2286480f0ebfbeb91971934474d86b064a9598a6771b1c33fcfe37368a81ebb6062b05f24e1c973999a98e80ee08c5b)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1075-2765

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

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Full Text: [2006\Ame J The13, 309.pdf](2006/Ame%20J%20The13,%20309.pdf)

Abstract: Latin America in the past two decades has increasingly become a significant contributor of clinical research. The future capacity of clinical and specifically cardiovascular research has the potential to positively affect human health in the region and foster economic growth. However, the challenges of conducting clinical research in Latin America include a need for logistical support from local governments, continued commitment to education of physicians and ethics committees, and creation of oversight bodies to guarantee the highest quality of research. Bibliometric analyses were conducted to assess trends in clinical research. Latin American investigators demonstrated a tendency to publish clinical results in local and regional journals. The region offers many opportunities for clinical research including large treatment-naive patient populations and most importantly motivated investigators capable of producing high-quality results. Strategies to foster clinical research in Latin America must be based on development of a positive regulatory environment, leveraged protection of intellectual property, creation of alliances between private and public sectors with incentives for investment in science and technology, and finally focus on areas of clinical expertise such as cardiovascular disease, epidemiology, gastroenterology, and infectious diseases. Fostering the creation of research alliances across and between continents will help in establishing the supportive environment for dissemination of important ethical clinical research in the region.

Keywords: Analyses, Bodies, Capacity, Cardiovascular, Cardiovascular Disease, Clinical, Clinical Research, Commitment, Development, Diseases, Economic, Education, Environment, Epidemiology, Ethical, Ethics, Gastroenterology, Growth, Health, Human, Human Health, Incentives, Infectious Diseases, Intellectual Property, Journals, Latin America, Local, Physicians, Populations, Potential, Protection, Public, Quality, Quality of, Regional, Research, Science, Science and Technology, Support, Technology, Trends

# Title: American Journal of Transplantation

Full Journal Title: [American Journal of Transplantation](http://www3.interscience.wiley.com/journal/118499698/toc?journal=ajt&CRETRY=1&SRETRY=0); [American Journal of Transplantation](http://web.ebscohost.com/ehost/detail?vid=1&hid=3&sid=fe144a58-df00-418c-84e2-84d2fe6243b6%40sessionmgr4&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=a9h&jid=HXS)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

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Full Text: 2006\Ame J Tra6, 2965.pdf

Abstract: Knowledge of the psychosocial benefits and harms faced by living kidney donors is necessary for informed consent and follow-up. We reviewed any English language study where psychosocial function was assessed using questionnaires in 10 or more donors after nephrectomy. We searched MEDLINE, EMBASE, Web of Science, Psych INFO, Sociological Abstracts and CINAHL databases and reviewed reference lists from 1969 through July 2006. Independently, two reviewers abstracted data on study, donor and control group characteristics, psychosocial measurements and their outcomes. Fifty-one studies examined 5139 donors who were assessed an average of 4 years after nephrectomy. The majority experienced no depression (77-95%) or anxiety (86-94%), with questionnaire scores similar to controls. The majority reported no change or an improved relationship with their recipient (86-100%), spouse (82-98%), family members (83-100%) and nonrecipient children (95-100%). Some experienced an increase in self-esteem. A majority (83-93%) expressed no change in their attractiveness. Although many scored high on quality of life measures, some prospective studies described a decrease after donation. A small proportion of donors had adverse psychosocial outcomes. Most kidney donors experience no change or an improvement in their psychosocial health after donation. Harms may be minimized through careful selection and follow-up.

Keywords: Anxiety, Children, Control, Databases, Depression, Donation, Embase, Flank Incision, Follow-up, Impact, Informed Consent, Knowledge, Living Kidney Donors, Long-Term, Medline, Mini-Incision, Nephrectomy, Outcomes, Prospective Studies, Psychosocial, Quality of Life, Quality-of-Life, Questionnaire, Questionnaires, Renal-Transplantation, Review, Science, Short Form-36, Systematic, Systematic Review, Term-Follow-up, Web of Science

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Full Text: [2008\Ame J Tra8, 2378.pdf](2008/Ame%20J%20Tra8,%202378.pdf)

Abstract: Advances in hematopoietic cell transplantation (HCT) have broadened its indications for use and resulted in more long-term HCT survivors. Some survivors develop chronic kidney disease (CKD); however, the incidence and risk factors are unclear. We performed a systematic review of studies identified from databases (MEDLINE, EMBASE, Science Citation Index), conference abstracts and reference lists from selected manuscripts. From 927 manuscripts, 28 patient cohorts were identified in which 9317 adults and children underwent HCT and 7317 (79%) survived to at least 100 days, permitting inclusion of 5337 (73% of survivors) in quantitative analyses. Although definitions and measurements varied widely, approximately 16.6% of HCT patients developed CKD and estimated glomerular filtration rate (eGFR in mL/min/1.73 m(2)) decreased by 24.5 after 24 months. This decrease was greater amongst patients undergoing allogeneic HCT (Delta eGFR = -40.0 versus -18.6 for autologous transplants). Several commonly reported risk factors for CKD were investigated, including acute renal failure, total body irradiation, graft versus host disease and long-term cyclosporine use. In conclusion, CKD following HCT is likely to be common; however, prospective studies with uniform definitions of CKD and risk factors are needed to confirm these findings and better define the underlying mechanisms to promote therapies that prevent this complication.

Keywords: Bone-Marrow-Transplantation, Chronic Kidney Disease (Ckd), Citation, Complications, Creatinine Clearance, Databases, Embase, Glomerular-Filtration-Rate, Hematopoietic Stem Cell Transplantation, Hemolytic-Uremic Syndrome, Irradiation, Liver-Disease, Long-Term Survivors, Mechanisms, Medline, Meta-Analysis, Patient, Risk Factor, Risk-Factors, Science, Science Citation Index, Stage Renal-Disease, Systematic Review, Total-Body Irradiation, Versus-Host-Disease

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Full Text: [2009\Ame J Tra9, 746.pdf](2009/Ame%20J%20Tra9,%20746.pdf)

Abstract: To clarify inconsistencies in the literature we performed a systematic review to identify the incidence, risk factors and outcome of early hepatic artery thrombosis (eHAT) after liver transplantation. We searched studies identified from databases (MEDLINE, EMBASE, Science Citation Index) and references of identified studies. Seventy-one studies out of 999 screened abstracts were eligible for this systematic review. The incidence of eHAT was 4.4% (843/21, 822); in children 8.3% and 2.9% in adults (p < 0.001). Doppler ultrasound screening (DUS) protocols varied from ‘no routine’ to ‘three times a day.’ The median time to detection was at day seven. The overall retransplantation rate was 53.1% and was higher in children (61.9%) than in adults (50%, p < 0.03). The overall mortality rate of patients with eHAT was 33.3% (range: 0-80%). Mortality in adults (34.3%) was higher than in children (25%, p < 0.03). The reported risk factors for eHAT were, cytomegalovirus mismatch (seropositive donor liver in seronegative recipient), retransplantation, arterial conduits, prolonged operation time, low recipient weight, variant arterial anatomy, and low volume transplantation centers. eHAT is associated with significant graft loss and mortality. Uniform definitions of eHAT and uniform treatment modalities are obligatory to confirm these results and to obtain a better understanding of this disastrous complication.

Keywords: Biliary Complications, Blood-Flow, Clinical Presentation, Complications, Hepatic Artery, Hepatic Artery Thrombosis, Implantable Doppler Probe, Liver Graft Survival, Liver Transplantation, Living-Related Donors, Mortality, Outcomes, Reduced-Size, Risk Factor, Risk Factors, Single-Center Experience, Solid Organ Transplantation, Systematic Review, Thrombosis, Thrombotic Complications, Thrombus, United-States, Urgent Revascularization, Vascular Complications

# Title: American Journal of Tropical Medicine and Hygiene

Full Journal Title: American Journal of Tropical Medicine and Hygiene

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Public, Environmental & Occupational Health: Impact Factor 1.932, 18/85 (2000); Impact Factor 2.126, 15/88 (2001)

Tropical Medicine: Impact Factor 1.932 (2000); Impact Factor 2.126, 1/12 (2001)

? Ratard, R.C., Kouemeni, L.E., Bessala, M.M., Ndamkou, C.N., Greer, G.J., Spilsbury, J. and Cline, B.L. (1990), Human schistosomiasis in Cameroon. I. Distribution of schistosomiasis. *American Journal of Tropical Medicine and Hygiene*, **42** (6), 561-572.

Abstract: The status of schistosomiasis in Cameroon was examined in a nationwide survey of 5th grade schoolchildren. Five hundred twelve schools were surveyed; 19, 524 urine and 22, 166 stool samples were examined. The 3 northern provinces, which comprised 29% of the population, had 87% of all urinary and 82% of all intestinal cases. These provinces have a low seasonal rainfall. The presence of temporary bodies of water and of molluscan intermediate hosts adapted to this environment permits intense transmission of schistosomiasis haematobium and mansoni. In the rest of the country, the distribution of Schistosoma haematobium and, S. mansoni was highly focal., S. intercalatum endemic areas were restricted to the equatorial forest and were small with low prevalences and intensities.

? Wilson, M.L., Agudelo Silva, F. and Spielman, A. (1990), Increased abundance, size, and longevity of food-deprived mosquito populations exposed to a fungal larvicide. *American Journal of Tropical Medicine and Hygiene*, **43** (5), 551-556.

Abstract: To determine whether the quantity of food available to mosquitoes in their aquatic environment limits the effectiveness of microbial pathogens as biological control agents, experimentally well-nourished and malnourished larval Aedes aegypti (Linn.) were exposed to graded inocula of the entomopathogenic fungus, Metarhizium anisopliae. First instar larvae were provided access either to 3 or to 5 mg of food, and lots from each food regimen were inoculated with 20, 40, 60, or 80 micrograms of fungal spores/ml water. Application of the fungus to well-nourished larvae reduced the proportion developing to the adult stage, and increased the size of those adults that developed; their survival was not affected. In the case of malnourished larvae, such applications appeared not to effect the proportion of larvae that matured, and, paradoxically, increased the size and longevity of these resulting adults. By destroying a portion of the larvae, the pathogen apparently reduced competition among malnourished larvae, thereby enhancing their survival, as well as the size of the resulting adults. Thus, biocontrol agents may fail when used as larvicides against such nutrient-deprived mosquitoes as frequently occur in nature.

? el Sayed, H.F., Rizkalla, N.H., Mehanna, S., Abaza, S.M. and Winch, P.J. (1995), Prevalence and epidemiology of Schistosoma mansoni and, S. haematobium infection in two areas of Egypt recently reclaimed from the desert. *American Journal of Tropical Medicine and Hygiene*, **52** (2), 194-198.

Abstract: Projects are being carried out in many regions of Egypt to reclaim land from the desert for agriculture. This paper presents findings from a baseline epidemiologic study conducted in 1992 in two newly reclaimed areas near Ismailia, Egypt. In the first area, just east of the Suez Canal, 40.0% of the residents tested positive for Schistosoma mansoni and 1.7% tested positive for, S. haematobium, while in the second area, 15 km southwest of Ismailia, 49.3% tested positive for, S. mansoni and 3.3% tested positive for, S. haematobium. The intensities of, S. mansoni infection were moderately high, with a geometric mean egg count of 76 eggs/gram of feces among positive individuals in the first area, and 100 eggs/gram of feces in the second area. When compared with a previous study conducted in 1985, the prevalence of, S. mansoni infection in the first area has increased from 21.7% to 42.1% among settlers in the last seven years, while that of, S. haematobium has decreased from 7.8% to 1.7%. These trends may result from changes in irrigation practices or other alterations in the local environment. There is a risk of schistosomiasis becoming a major public health problem in reclaimed areas if adequate control measures are not taken.

? Mahmud, M.A., Chappell, C., Hossain, M.M., Habib, M. and Dupont, H.L. (1995), Risk factors for development of first symptomatic *Giardia* infection among infants of a birth cohort in rural Egypt. *American Journal of Tropical Medicine and Hygiene*, **53** (1), 84-88.

Abstract: *Giardia* infection is associated with diarrheal diseases among infants and young children in both industrialized and developing countries. A study was conducted to demonstrate the predisposing factors for occurrence of the first symptomatic *Giardia* infection among infants in rural Egypt. The study cohort was followed from birth through the first year of life. Univariate and multivariate analyses of data revealed that infants less than six months of age were at special risk for developing their first symptomatic infection compared with infants more than six months of age. Analysis of the data, furthermore, revealed an increased risk of infant *Giardia* infection associated with living in a household without a latrine (relative risk [RR] = 2.63, confidence interval [CI] = 1.4-4.9, P < 0.05), a mud floor in the sleeping rooms (RR = 1.79, CI = 1.O30-3.0, P < 0.05), and household exposure to more than 10 chickens (RR = 2.5, CI = 1.13-5.56, P < 0.05). In contrast, the mother’s education beyond the primary level (RR = 0.28, CI = 0.09-0.85, P < 0.05), drinking water stored in metallic containers (RR = 0.33, CI = 0.11-0.98, P < 0.05), and male sex (RR = 0.52, CI = 0.3-0.89, P < 0.05) were associated with decreased risk of *Giardia* infection. These data suggest that in addition to age of infants, poverty, low education, gender discrimination, and certain environmental conditions potentiated the risk for developing the first symptomatic infection.

? Semenza, J.C., Roberts, L., Henderson, A., Bogan, J. and Rubin, C.H. (1998), Water distribution system and diarrheal disease transmission: A case study in Uzbekistan. *American Journal of Tropical Medicine and Hygiene*, **59** (6), 941-946.

Abstract: Deteriorating water treatment facilities and distribution systems pose a significant public health threat, particularly in republics of the former Soviet Union. Interventions to decrease the disease burden associated with these water systems range from upgrading distribution networks to installing reverse osmosis technology. To provide insight into this decision process, we conducted a randomized intervention study to provide epidemiologic data for water policy decisions in Nukus, Uzbekistan, where drinking water quality is suboptimal. We interviewed residents of 240 households, 120 with and 120 without access to municipal piped water. Residents of 62 households without piped water were trained to chlorinate their drinking water at home in a narrow-necked water container with a spout. All study subjects (1583 individuals) were monitored biweekly for self-reported diarrheal illness over a period of 9.5 weeks. The home chlorination intervention group had the lowest diarrheal rate (28.8/1,000 subjects/month) despite lack of access to piped water in their homes. Compared with the two groups that did not receive the intervention this rate was one-sixth that of the group with no piped water (179.2/1,000 subjects/month) and one-third that of the households with piped water (75.5/1,000 subjects/month). More than 30% of the households with piped water lacked detectable levels of chlorine residues in their drinking water, despite two-stage chlorination of the source water, and were at increased risk of diarrhea. Forty-two percent of these municipal users reported that water pressure had been intermittent within the previous two days. The dramatic reduction in diarrheal rates in the home-chlorination intervention group indicates that a large proportion of diarrheal diseases in Nukus are water-borne. The home-chlorination group had less diarrhea than the group with piped water, implicating the distribution system as a source of disease transmission. Taken together, these epidemiologic data would support the hypothesis that diarrhea in the piped water group could be attributed to cross-contamination between the municipal water supply and sewer, due to leaky pipes and lack of water pressure. Relatively inexpensive steps, including chlorination, maintaining water pressure, and properly maintaining the distribution system, rather than reverse osmosis technology, should reduce diarrheal rates.

? Shapiro, R.L., Otieno, M.R., Adcock, P.M., Phillips Howard, P.A., Hawley, W.A., Kumar, L., Waiyaki, P., Nahlen, B.L. and Slutsker, L. (1999), Transmission of epidemic *Vibrio cholerae* O1 in rural western Kenya associated with drinking water from Lake Victoria: An environmental reservoir for cholera? *American Journal of Tropical Medicine and Hygiene*, **60** (2), 271-276.

Abstract: Sub-Saharan Africa has the highest reported cholera incidence and mortality rates in the world. In, (1997), a cholera epidemic occurred in western Kenya. Between June 1997 and March, (1998), 14, 275 cholera admissions to hospitals in Nyanza Province in western Kenya were reported. There were 547 deaths (case fatality rate = 4%). of 31 *Vibrio cholerae* O1 isolates tested, all but one were sensitive to tetracycline. We performed a case-control study among 61 cholera patients and age-, sex-, and clinic-matched controls. Multivariate analysis showed that risk factors for cholera were drinking water from Lake Victoria or from a stream, sharing food with a person with watery diarrhea, and attending funeral feasts. Compared with other diarrheal pathogens, cholera was more common among persons living in a village bordering Lake Victoria. Cholera has become an important public health concern in western Kenya, and may become an endemic pathogen in the region.

? Leach, C.T., Koo, F.C., Kuhls, T.L., Hilsenbeck, S.G. and Jenson, H.B. (2000), Prevalence of *Cryptosporidium* parvum infection in children along the Texas-Mexico border and associated risk factors. *American Journal of Tropical Medicine and Hygiene*, **62** (5), 656-661.

Abstract: We examined the epidemiology of *Cryptosporidium* parvum in children aged 6 months to 13 years living in 1) colonias along the border (n = 105), 2) a clinic in an urban border community (n = 65), and 3) clinics in a large urban nonborder area (n = 109). Serum IgG and IgA anticryptosporidial antibodies were measured by enzyme-linked immunosorbent assay (ELISA). Overall, 70.2% (196/279) of subjects had detectable C. parvum antibodies. Prevalence rates were higher (93/105 [89%]) in the colonias and urban border community (53/65 [82%]) compared to the urban nonborder community (50/109 [46%]). Within colonias, independent risk factors for C. parvum infection included consumption of municipal water instead of bottled water, older age, and lower household income. Children living along the Texas-Mexico border have a higher rate of infection with C. parvum compared to children living in a large nonborder urban area. Within colonias, C. parvum infection was associated with source of water supply, age, and socioeconomic status.

Keywords: Antibodies, Seroepidemiology, Community, Outbreak

? Amato, V.S., Tuon, F.F., Siqueira, A.M., Nicodemo, A.C. and Neto, V.A. (2007), Treatment of mucosal leishmaniasis in Latin america: Systematic review. *American Journal of Tropical Medicine and Hygiene*, **77** (2), 266-274.

Abstract: Mucosal leishmaniasis (ML) is an important endemic disease and public-health problem in underdeveloped countries because of its significant morbidity and mortality. Increases in ecological tourism have extended this problem to developed countries. This form of leishmaniasis, caused by reactivation after primary cutaneous lesion, has a natural history of progressive destruction of the nasal septa and soft and hard palates, causing facial disfiguration and leading to respiratory disturbances. Treatment of ML, based on several therapies, depends on use of toxic compounds, and few drugs have emerged over the past 40 years. Drug resistance has increased, and the cure rate is no better than 70% in the largest studies. Despite these data, there has been no systematic review of therapies used to treat this important tropical disease. The aim of this study is to determine the best drug management for treatment of ML in Latin America based on the best studies offered by the medical literature. The MEDLINE, LILACS, EMBASE, Web of Science, and Cochrane Library databases were searched to identify articles related to ML and therapy. The studies were independently selected by 2 authors. Articles with sufficient data for cure and treatment failures, internal and external validity information, and > 4 patients in each treatment were included. Validation of this systematic review was based on guidelines to guarantee quality; 22 articles met our inclusion criteria. Stibogluconate achieved a 51% cure rate (76/150 patients), and 88% of patients treated with meglumine were cured (121 patients). Pentamidine and amphotericin were as effective as meglumine. Use of itraconazole and other therapies (pentoxifylline, allopurinol, or interferon-gamma) was controversial, and numbers of patients in some studies were insufficient for statistical analysis. Meglumine may be the drug of choice in the treatment of ML, as it offers similar cure rates when compared with amphotericin B and pentamidine. Cost, adverse effects, local experience, and availability of drugs to treat ML are strong points to be considered before determining the best management of this disease, especially in developing countries.

Keywords: Adverse Effects, Allopurinol, Amphotericin-B, Analysis, Articles, Authors, Braziliensis-Braziliensis, Cochrane, Cutaneous Leishmaniasis, Databases, Developing Countries, Disease, Drug, Drug Resistance, Efficacy, Embase, Guidelines, History, Information, Itraconazole, Latin America, Literature, Management, Medical, Medline, Meglumine Antimoniate, Morbidity, Mortality, Mucocutaneous Leishmaniasis, Points, Primary, Public Health, Resistance, Review, Science, Sodium Stibogluconate, Statistical, Systematic, Systematic Review, Therapy, Transplant Recipient, Treatment, Validation, Validity, Web of Science

# Title: American Journal of Veterinary Research

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Language: English

Publisher: Amer Veterinary Medical Assoc

Publisher Address: 1931 N Meacham Rd Suite 100, Schaumburg, IL 60173-4360

Subject Categories:

Veterinary Sciences: Impact Factor

? Schiff, L.J., Storz, J. and Collier, J.R. (1973), Kinetics of viral adsorption in singly and multiply infected bovine cells. *American Journal of Veterinary Research*, **34** (11), 1453-1455.

? Slater, M.R., Scarlett, J.M., Donoghue, S., Kaderly, R.E., Bonnett, B.N., Cockshutt, J. and Erb, H.N. (1992), Diet and exercise as potential risk factors for osteochondritis dissecans in dogs. *American Journal of Veterinary Research*, **53** (11), 2119-2124.

Abstract: A matched case-control study was conducted to evaluate dietary components and exercise patterns as potential risk factors for osteochondritis dissecans in dogs. A telephone interview, with a standard questionnaire and protocol, was used to collect data on dietary intake of calories and nutrients and on the usual amounts and types of exercise of each dog. Thirty-one dogs with osteochondritis dissecans and 60 controls were matched on the basis of breed, sex, and age. Using a conditional logistic regression model, high dietary calcium, playing with other dogs, and drinking well water (rather than city water) were associated with increased risk of osteochondritis dissecans. Feeding of specialty dry dog foods was associated with decreased risk.

Keywords: Young-Dogs, Calcium, Excess

# Title: American Laboratory

Full Journal Title: American Laboratory

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ISSN: 0044-7749

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Journal Country/Territory: United States

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Publisher: Int Scientific Commun Inc

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Subject Categories:

Chemistry, Analytical: Impact Factor 0.285, 66/68 (2001)

Instruments & Instrumentation: Impact Factor 0.285, 32/48 (2001)

? Romano, J.P. (1993), Capillary ion analysis: A method for determining ions in water and solid-waste leachates. *American Laboratory*, **25** (8), 48.

Abstract: Capillary ion analysis is a powerful separation technique that offers many advantages for the analysis of inorganic and organic acid anions in groundwater.

Keywords: Electrophoresis

? Srinivasan, P.T., Viraraghavan, T. and Subramanian, K.S. (2000), Method development for drinking water aluminum measurement using a graphite furnace atomic absorption spectrophotometer. *American Laboratory*, **32** (3), 76 (10 pages).

Abstract: The literature reports a number of differences in. temperature programs and modifiers for the determination of aluminum in drinking water. This paper provides a systematic investigation of these conditions in order select the optimum conditions. The method developed is verified by measuring a reference sample containing a known amount of aluminum.

# Title: American Mineralogist

Full Journal Title: American Mineralogist

ISO Abbreviated Title:

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ISSN: 0003-004X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Bradley, W.F. (1940), The structural scheme of attapulgite. *American Mineralogist*, **25** (6), 405-410.

# Title: American Naturalist

Full Journal Title: American Naturalist

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Trelease, W. (1909), Darwin as a naturalist – Darwin’s work on cross pollination in plants. *American Naturalist*, **43** (507), 131-142.

Full Text: [-1959\Ame Nat43, 131.pdf](-1959/Ame%20Nat43,%20131.pdf)

Notes: highly cited

? Clark, D.A. and Clark, D.B. (1984), Spacing dynamics of a tropical rain-forest tree - Evaluation of the Janzen-Connell Model. *American Naturalist*, **124** (6), 769-788.

Full Text: [1984\Ame Nat124, 769.pdf](1984/Ame%20Nat124,%20769.pdf)

Keywords: Evaluation

# Title: The American Physical Society

Schaaf, P. and Talbot, J. (1989), Kinetics of random sequential adsorption. *The American Physical Society*, **62**, 175-178.

# Title: American Psychologist

Full Journal Title: [American Psychologist](http://ovidsp.uk.ovid.com/sp-2.3/ovidweb.cgi?QS2=434f4e1a73d37e8c2871575337c986e9f1f4ed67c4b87d69ed26292731ac5873182492c3f78598b53ba90fbe6f972a591bb4496467f62f700d07e5322c8340258dc1165d5c5aed59ea941d33f051f8aa2ff1777f3a0b389152e5429d0e08f0e420481c43f2c48b9)

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Journal Country/Territory: United States

Language: English

Publisher: Amer Psychological Assoc

Publisher Address: 750 First St NE, Washington, DC 20002-4242

Subject Categories:

Psychology, Multidisciplinary: Impact Factor 5.981, / (2002)

? Over, R. and Smallman, S. (1973), Maintenance of individual visibility in publication of collaborative research by psychologists. *American Psychologist*, **28** (2), 161-166.

Full Text: [1960-80\Ame Psy28, 161.pdf](1960-80/Ame%20Psy28,%20161.pdf)

? Markley, R.P. and Adams, R.M. (1973), Science Citation Index. *American Psychologist*, **28** (6), 534.

Full Text: [1960-80\Ame Psy28, 534.pdf](1960-80/Ame%20Psy28,%20534.pdf)

Abstract: Two recent comments have discussed the problems of assuring relative completeness in the conduct of a literature search (see records 1990-56978-001 and 1990-58219-001). Both letters failed to mention the Science Citation Index, which can be found in most major university libraries. The SCI lists for any particular source article all or nearly all subsequent papers that have cited or referenced the source. All older references used in recent periodicals are included. The use of the SCI in conjunction with the hierarchal search procedure suggested by Goldsamt would seem to be an obvious advantage. (PsycINFO Database Record (c) 2006 APA, all rights reserved)

Keywords: Science Citation Index, Automated Information Retrieval, Literature Review, Psychology, Scientific Communication, Information Services, Libraries

? Rushton, J.P. and Roediger, H.L. (1978), Evaluation of 80 psychology journals based on Science Citation Index. *American Psychologist*, **33** (5), 520-523.

Full Text: [1960-80\Ame Psy33, 520.pdf](1960-80/Ame%20Psy33,%20520.pdf)

Abstract: Ranked 80 psychology journals and those from closely related fields in terms of their impact factors (average citations per article) where the numerator for the impact factor was based on the total number of citations accruing to 1972-1973 articles in that journal in the 1974 Science Citation Index. The top 3 journals were Psychological Review, Cognitive Psychology, and Psychological Bulletin. Comparisons are made with a ranking study conducted by M. J. White and K. G. White (1977). For related article, see PA, Vol 56:4649. (PsycINFO Database Record (c) 2006 APA, all rights reserved)

Keywords: Evaluation, Science Citation Index, Citation Analysis for Relative Impact of Psychology Journals

? Daniel, R.S. (1979), Bibliometrics and scholarly impact. *American Psychologist*, **34** (8), 725-726.

Full Text: [1960-80\Ame Psy34, 725.pdf](1960-80/Ame%20Psy34,%20725.pdf)

Keywords: Bibliometrics

? Boor, M. (1982), The citation impact factor - Another dubious index of journal quality. *American Psychologist*, **37** (8), 975-977.

Full Text: [1982\Ame Psy37, 975.pdf](1982/Ame%20Psy37,%20975.pdf)

? Friman, P.C., Allen, K.D., Kerwin, M.L.E. and Larzelere, R. (1993), Changes in modern psychology: A citation analysis of the Kuhnian displacement thesis. *American Psychologist*, **48** (6), 658-664.

Full Text: [1993\Ame Psy48, 658.pdf](1993/Ame%20Psy48,%20658.pdf)

Abstract: Many psychologists believe a Kuhnian revolution-a competitive event between incommensurate paradigms in which a winner displaces losers after chaotic upheaval-has occurred in psychology. Cognitive psychology is said to be displacing behavioral psychology and psychoanalysis, but few published data support this thesis. Social science citation records from the leading journals in cognitive psychology, behavioral psychology, and psychoanalysis between 1979 and 1988 were analyzed. Results show an increasing trend for cognitive psychology but also high citation rates with no downward trends for behavioral psychology. Citation rates for psychoanalysis are not as high, but indications of decline are marginal. These findings do not support the Kuhnian displacement thesis on changes in modern psychology.

? Fine, M.A. and Kurdek, L.A. (1993), Reflections on determining authorship credit and authorship order on faculty student collaborations. *American Psychologist*, **48** (11), 1141-1147.

Full Text: [1993\Ame Psy48, 1141.pdf](1993/Ame%20Psy48,%201141.pdf)

Abstract: The purpose of this article is to explore the process of determining authorship credit and authorship order on collaborative publications with students. The article presents hypothetical cases that describe relevant ethical issues, highlights ethical principles that could provide assistance in addressing these dilemmas, and makes recommendations to faculty who collaborate with students on scholarly projects. It is proposed that authorship credit and order decisions should be based on the relative scholarly abilities and professional contributions of the collaborators. Furthermore, it is recommended that both faculty and students participate in the authorship decision-making process early in the collaborative endeavor.

Keywords: Authorship, Ethics, Psychologists, Publications

? Thompson, B. (1994), The big picture(s) in deciding authorship order. *American Psychologist*, **49** (12), 1095-1096.

Full Text: [1994\Ame Psy49, 1095.pdf](1994/Ame%20Psy49,%201095.pdf)

Keywords: Authorship

? Gibson, K.R. (2000), Corroboration. *American Psychologist*, **55** (2), 271-272.

Full Text: [2000\Ame Psy55, 271.pdf](2000/Ame%20Psy55,%20271.pdf)

? Martens, M.P. (2000), Difficulties in analyzing trends in psychology. *American Psychologist*, **55** (2), 272-273.

Full Text: [2000\Ame Psy55, 272.pdf](2000/Ame%20Psy55,%20272.pdf)

Keywords: Psychology, Trends

? Friman, P.C., Allen, K.D., Kerwin, M.L.E. and Larzelere, R. (2000), Questionable validity, not vitality. *American Psychologist*, **55** (2), 274-275.

Full Text: [2000\Ame Psy55, 274.pdf](2000/Ame%20Psy55,%20274.pdf)

Keywords: Validity

? Marin, G.N. (2000), There’s more neuroscience. *American Psychologist*, **55** (2), 275-276.

Full Text: [2000\Ame Psy55, 275.pdf](2000/Ame%20Psy55,%20275.pdf)

? Robins, R.W., Gosling, S.D. and Craik, K.H. (2000), Trends in psychology: An empirical issue. *American Psychologist*, **55** (2), 276-277.

Full Text: [2000\Ame Psy55, 276.pdf](2000/Ame%20Psy55,%20276.pdf)

Keywords: Psychology

? Anseel, F., Duyck, W., De Baene, W. and Brysbaert, M. (2004), Journal impact factors and self-citations: Implications for psychology journals. *American Psychologist*, **59** (1), 49-51

Full Text: [2004\Ame Psy59, 49.pdf](2004/Ame%20Psy59,%2049.pdf)

Keywords: Journals, Quality, Self-Citations

? Stroebe, W. (2000), The graying of academia will it reduce scientific productivity? *American Psychologist*, **65** (7), 660-673.

Full Text: [2010\Ame Psy65, 660.pdf](2010/Ame%20Psy65,%20660.pdf)

Abstract: The belief that science is a young person’s game and that only young scientists can be productive and publish high-quality research is still widely shared by university administrators and members of the scientific community. Since the average age of university faculties is increasing not only in the United States but also in Europe, the question arises as to whether this belief is correct. If it were valid, the abolition of compulsory retirement in the United States and some parts of Canada would lower the productivity of these university systems. To address this question, this article reviews research on the association of age and scientific productivity conducted during the last four decades in North America and Europe. Whereas early research typically showed a decline in productivity after the ages of 40 to 45 years, this decline has been absent in more recent studies. Explanations for this change are discussed.

Keywords: Academic Productivity, Scientific Achievement, Age Discrimination, Creative Potential, Cum Laude Doctorates, Bibliometric Indicators, Mandatory Retirement, Brainstorming Groups, Faculty Retirement, Age, Impact, Psychologists, Personality, Performance

# Title: American Review of Respiratory Disease

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Impact Factor

? Brunekreef, B., Dockery, D.W. Speizer, F.E., Ware, J.H., Spengler, J.D. and Ferris, B.G. (1989), Home dampness and respiratory morbidity in children. *American Review of Respiratory Disease*, **140** (5), 1363-1367.

Abstract: This study examined the relationship between measures of home dampness and respiratory illness and symptoms in a cohort of 4, 625 eight-to 12-yr-old children living in six U.S. cities. Home dampness was characterized from questionnaire reports of mold or mildew inside the home, water damage to the home, and the occurrence of water on the basement floor. Symptoms of respiratory and other illness were collected by questionnaire. Pulmonary function was measured by spirometry. Signs of home dampness were reported in a large proportion of the homes. In five of the six cities, one or more of the dampness indicators were reported in more than 50% of the homes. The association between measures of home dampness and both respiratory symptoms and other non-chest illness was both strong and consistent. Odds ratios for molds varied from 1.27 to 2.12, and for dampness from 1.23 to 2.16 after adjustment for maternal smoking, age, gender, city of residence, and parental education. The relationship between home dampness and pulmonary function was weak, with an estimated mean reduction of 1.0% in FEF25-75 associated with dampness and 1.6% with molds. We conclude that dampness in the home is common in many areas of the United States and that home dampness is a strong predictor of symptoms of respiratory and other illness symptoms among 8-to 12-yr-old children.

# Title: American Scientist

Full Journal Title: [American Scientist](http://www.americanscientist.org/issues/past.aspx); [American Scientist](http://web.ebscohost.com/ehost/detail?vid=1&hid=6&sid=46c8df41-b124-4618-8da5-4c4e50721708%40sessionmgr3&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=aph&jid=ASI)

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? Galvez, A., Maqueda, M., Martinez-Bueno, M. and Valdivia, E. (2000), Scientific publication trends and the developing world - What can the volume and authorship of scientific articles tell us about scientific progress in various regions? *American Scientist*, **88** (6), 526-533.

Full Text: Ame Sci88, 526.pdf

Keywords: Authorship, Developing, Developing World, Publication, Scientific Progress, Trends, Volume, World

# Title: American Sociological Review

Full Journal Title: American Sociological Review

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Issues/Year:

Journal Country/Territory:

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Subject Categories:

: Impact Factor

? Baldi, S. (1998), Normative versus social constructivist processes in the allocation of citations: A network-analytic model. *American Sociological Review*, **63** (6), 829-846.

Full Text: [1998\Ame Soc Rev63, 829.pdf](1998/Ame%20Soc%20Rev63,%20829.pdf)

Abstract: I assess competing arguments on the determinants of scientists’ citation patterns by developing a new approach to the multivariate study of citations that builds upon a network-analytic model. Using data on articles about celestial masers, an astrophysics research area, logistic regressions with robust standard errors examine the extent to which characteristics of both potentially citing and potentially cited papers influence the probability that a citation exists between the papers. The results identify significant positive, effects of cited article cognitive content and cited article quality, providing support for a normative interpretation of the allocation of citations in which citations reflect payment of intellectual debt. In contrast, indicators of an author’s position within the stratification structure of science fail to significantly improve the fit of the model, and thus provide no support for the social constructivist claim that citations are rhetorical tools of persuasion. Furthermore, the lack of effects of social ties between citing and cited authors provides little support for the argument that authors who know one another are more likely to cite one another’s work. Overall, these results suggest that authors are likely to cite those articles most relevant to their work in terms of intellectual content, and seem little concerned with the characteristics of authors who write them.

Keywords: Self-Citations, Index

# Title: American Sociologist

Full Journal Title: [American Sociologist](http://www.springerlink.com/content/107894/); [American Sociologist](http://www.springerlink.com/content/107894/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0003-1232

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Oromaner, M.J. (1968), Most cited sociologists: Analysis of introductory text citations. *American Sociologist*, **3** (2), 124-126.

Full Text: [1960-80\Ame Soc3, 124.pdf](1960-80/Ame%20Soc3,%20124.pdf)

Keywords: Citations

? Cole, J. and Cole, S. (1971), Measuring quality of sociological research - Problems in use of Science Citation Index. *American Sociologist*, **6** (1), 23-??.

Full Text: 1960-80\Ame Soc6, 23.pdf

Keywords: Citation, Science Citation Index

? Chubin, D. (1973), Use of Science Citation Index in Sociology. *American Sociologist*, **8** (4), 187-191.

Keywords: Citation, Science Citation Index

? Garfield, E. (1974), Social Sciences Citation Index. *American Sociologist*, **9** (3), 164-165.

Full Text: Ame Soc9, 164.pdf

? Chubin, D. (1974), Social Sciences Citation Index - Reply. *American Sociologist*, **9** (3), 165.

Full Text: Ame Soc9, 165.pdf

# Title: American Statistician

Full Journal Title: [American Statistician](http://uk.jstor.org/journals/00031305.html); [American Statistician](http://infotrac.galegroup.com/itw/infomark/1/1/1/purl=rc18_EAIM_0__jn+%22American+Statistician%22?sw_aep=jrycal5); [American Statistician](http://proquest.umi.com/pqdweb?RQT=318&pmid=28405)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0003-1305

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? (1963), Recent developments in statistical bibliography. *American Statistician*, **17** (1), 25.

Full Text: [1960-80\Ame Sta17, 25.pdf](1960-80/Ame%20Sta17,%2025.pdf)

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Full Text: [1960-80\Ame Sta18, 24.pdf](1960-80/Ame%20Sta18,%2024.pdf)

Leemis, L.M., Schmeiser, B.W. and Evans, D.L. (2000), Survival distributions satisfying Benford’s law. *American Statistician*, **54** (4), 236-241.

Full Text: [2000\Ame Sta54, 1.pdf](2000/Ame%20Sta54,%201.pdf)

Abstract: Hill stated that “An interesting open problem is to determine which common distributions (or mixtures thereof) satisfy Benford’s law ….” This article quanties compliance with Benford’s law for several popular survival distributions. The traditional analysis of Benford’s law considers its applicability to datasets. This article switches the emphasis to probability distributions that obey Benford’s law.

Keywords: Lifetimes, Random Variables, Variate Generation

# Title: American Surgeon

Full Journal Title: [American Surgeon](http://web.ebscohost.com/ehost/detail?vid=1&hid=3&sid=17f27e89-089a-4b98-aee7-d639e67aee7f%40sessionmgr12&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=a9h&jid=AUR); [American Surgeon](http://www.ingentaconnect.com/content/sesc/tas)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0003-1348

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mittal, V., Salem, M., Tyburski, J., Brocato, J., Lloyd, L., Silva, Y., Silbergleit, A., Shanley, C. and Remine, S. (2004), Residents’ working hours in a consortium-wide surgical education program. *American Surgeon*, **70** (2), 127-131.

Full Text: [2004\Ame Sur70, 127.pdf](2004/Ame%20Sur70,%20127.pdf)

Abstract: Traditional work schedules of surgical residents have been cited as a factor that negatively influences education and the quality of patient care. Demands by federal and state legislators as well as the general public have forced a re-evaluation of the issue. Long working hours and resulting sleep deprivation affect the lives of residents profoundly, but the question remains does it lower the quality of medical care? The justification for the long hours is that they are vital to medical education, but residents are so drained by their schedules that they are rarely in the best state of mind to learn from their experiences. Under the scrutiny of the Resident Review Committee (RRC), many programs and institutions have been cited in the recent past in violation of resident working hour requirements. As a result, many institutions have implemented reforms, thereby reducing the number of citations they received. In spite of having the highest number of citations, the field of general surgery has failed to show any improvement. The Oakland Health Education Programme Center for Medical Education (OHEP), a consortium of 16 teaching hospitals in the State of Michigan, set out to review the components of general surgery residency training in order to be able to make recommendations that might assist program directors in making appropriate changes where necessary to enhance resident education and the quality of patient care as well as to meet the personal demands of residents. Questionnaires on residents’ attitudes concerning their working hours and possible reforms were sent to all general surgery residency programs in the OHEP consortium. The questionnaire consisted of 25 questions divided into three major sections: the first section encompassed demographic information including current work hours and on-call schedules. The second section consisted of questions relating to attitudes toward work hours and the options for change. The third section consisted of questions that viewed the perceived effects of limited work hours. From the seven participating hospitals with surgery residency programs in OHEP, 92 residents responded to our survey. The majority of residents were in the first 3 years of postgraduate training. The mean age of residents was 30 years old. Sixty-four per cent of respondents were male, and 18 per cent were female. Residents reported an average of 56 with a range of 0 to 110 hours on call. Variations in the number of hours had to do with the various rotations residents were on, in that during certain elective rotations, residents were not assigned to any call. The on-call schedule varied; alternate nights were reported by 11 per cent, every third night by 33 per cent, and every fourth night or more by 53 per cent. The majority of surgical residents did express the need for reform and did not feel that reforms would affect the quality of resident education. However, residents did not want to lengthen residency training beyond the 5 years. The results of our study indicates that the majority of residents in general surgery programs in Michigan perceive a need for reform of work schedules. Surgical educators may have underestimated this need in the past. Most residents thought that long hours impaired their educational experience and at times compromised their clinical care.

# Title: American Zoologist

Full Journal Title: [American Zoologist](http://www.jstor.org/action/showPublication?journalCode=amerzool&cookieSet=1); [American Zoologist](http://www.bioone.org/loi/azoo?genre=journal&stitle=azoo&cookieSet=1); [American Zoologist](http://vnweb.hwwilsonweb.com/hww/Journals/getIssues.jhtml?sid=HWW:OMNIS&id=-4568); [American Zoologist](http://icb.oxfordjournals.org/archive/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0003-1569

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Sower, S.A., Suzuki, K. and Reed, K.L. (2000), Perspective: Research activity of enteropancreatic and brain/central nervous system hormones across invertebrates and vertebrates. *American Zoologist*, **40** (2), 165-178.

Full Text: [2000\Ame Zoo40, 165.pdf](2000/Ame%20Zoo40,%20165.pdf)

Abstract: During the past two decades there have been rapid advances in our knowledge of the structure and function of the protein hormones in the brain and gastroenteropancreatic system (GEP). Many published articles have highlighted the superfamily of hormonal peptides, specifically, the mechanisms and control of peptide synthesis in neural and non-neural tissues, and gene structure. Here we present an analysis of the annual trends, between 1980 and 1997, of research emphasis on six protein/peptide hormones, as reflected by their individual frequency of publication per year. Although this symposium is focused on the GEP hormones, we provide herein a perspective on the level of research activity of the hormones Insulin, glucagon, cholecystokinin, insulin-like growth factor-I and -II, neuropeptide Y and somatostatin in the brain/gut systems throughout the vertebrates and invertebrates. Many publications deal with the evolution of these peptides and their superfamilies, yet as noted in this review, there are relatively few references to these peptides in invertebrates and non-mammalian species. Typically in invertebrates, the number of citations is low and mostly focused on three phyla, the arthropods, mollusks and helminths. Generally, in the vertebrates the smallest number of citations is in the cyclostomes and elasmobranchs. Because most groups of invertebrates and vertebrates have received scant attention, phylogenetic comparisons are limited. Evolutionary information concerning Important groups of animals, such as helminths, mollusks, protochordates and cyclostomes, is essential to establish the phylogenetic histories of the hormonal peptides. The challenge to comparative endocrinologists is to examine species in key evolutionary positions in order to gain an understanding of the diversity and function of the hormones and to determine the molecular features that form clues to their phyletic interrelationships and progression.

Keywords: Brain, Evolution, Glucagon-Like Peptides, Growth-Factors, Insulin, Neuropeptide-Y, Phylogeny, Polypeptide, Publications, Receptors, Research

# Title: Amfiteatru Economic

Full Journal Title: Amfiteatru Economic

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bogdan, I., Iuliana, I., Valentin, D. and Vasile, G. (2009), The quality management of the services of scientometric quantification of the research of the members of the university community deployed within the “E-Univroscient” concept. *Amfiteatru Economic*, **11** (26), 429-440.

Full Text: [2009\Amf Eco11, 429.pdf](2009/Amf%20Eco11,%20429.pdf)

Abstract: The concept called “e-UnivRoScient” (e-University Romanian Scient) proposes the search of new opportunities of information and documentation, at the basis level of structuring in the university scientific research - the individual, the collectivity, the chair or the department. By deploying the concept e-UnivRoScient in an on line database it permits to obtain a harmonious relationship between the creators of scientific information from the level of the university degree units and its consumers, through the achievement of an informational system with visible database at the national level, which will present the scientific preoccupations of the university researchers under all the aspects and components of the research activity. By synthesizing and weighting all the components of the research activity it can be obtained the profile of a researcher which activates in the university environment, joining normative assessment rules for the evaluation of scientific activity with rules resulted from an empirical research. This concept will approach the university research on the principle of a scientific exchange in which the academic community will participate. The aspects presented in this paper have an original character and fulfill in the opinion of the authors with qualitative elements the scientometric quantification of the scientific research management.

Keywords: Management, Online Database, Research, Research Scientific Portfolio, Researcher’s Profile, Scientific Research, Scientometrics

# Title: AMIA Annual Symposium Proceedings

Full Journal Title: [AMIA Annual Symposium Proceedings](http://www.pubmedcentral.nih.gov/tocrender.fcgi?action=archive&journal=362)

ISO Abbreviated Title:

JCR Abbreviated Title: AMIA Annu Symp Proc

ISSN: 1559-4076

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Synnestvedt, M. and Chen, C. (2003), Visualizing AMIA: A medical informatics knowledge domain analysis. *AMIA Annual Symposium Proceedings*, 1024.

Full Text: [2003\AMIA Ann Sym Pro03, 1024.pdf](2003/AMIA%20Ann%20Sym%20Pro03,%201024.pdf)

Abstract: Medical Informatics has been described as having a “long and delayed adolescence” which continues to “find itself in search of self-definition”, and the AMIA Symposium Proceedings have been viewed as an indicator of trends in the field. This pilot study investigated the feasibility of applying a knowledge domain visualization approach to clarifying the domain of medical informatics based on the AMIA publications. Document co-citation analysis (DCA) is combined with Pathfinder Network Scaling (PFNET), visualization, and animation to develop a 3-D knowledge landscape.

Keywords: 3D, Analysis, Approach, Co-Citation, Co-Citation Analysis, Cocitation, Domain Analysis, Feasibility, Field, Indicator, Informatics, Knowledge, Landscape, Medical, Medical Informatics, Pilot, Publications, Trends, Visualization

? Synnestvedt, M.B., Chen, C. and Holmes, J.H. (2005), CiteSpace II: visualization and knowledge discovery in bibliographic databases. *AMIA Annual Symposium Proceedings*, 724-728.

Full Text: [2005\AMIA Ann Sym Pro05, 724.pdf](2005/AMIA%20Ann%20Sym%20Pro05,%20724.pdf)

Abstract: This article presents a description and case study of CiteSpace II, a Java application which supports visual exploration with knowledge discovery in bibliographic databases. Highly cited and pivotal documents, areas of specialization within a knowledge domain, and emergence of research topics are visually mapped through a progressive knowledge domain visualization approach to detecting and visualizing trends and patterns in scientific literature. The test case in this study is progressive knowledge domain visualization of the field of medical informatics. Datasets based on publications from twelve journals in the medical informatics field covering the time period from 1964-2004 were extracted from PubMed and Web of Science (WOS) and developed as testbeds for evaluation of the CiteSpace system. Two resulting document-term co-citation and MeSH term co-occurrence visualizations are qualitatively evaluated for identification of pivotal documents, areas of specialization, and research trends. Practical applications in bio-medical research settings are discussed.

Keywords: Application, Approach, Bibliographic Databases, Biomedical, Biomedical Research, Case Study, Co-Citation, Cocitation, Databases, Discovery, Evaluation, Field, Identification, Informatics, Journals, Knowledge, Literature, Medical, Medical Informatics, Publications, PUBMED, Research, Scientific Literature, Term, Trends, Visualization, Web of Science

? Lavallie, D.L. and Wolf, F.M. (2005), Publication trends and impact factors in the Medical Informatics literature. *AMIA Annual Symposium Proceedings*, 1018.

Full Text: [2005\AMIA Ann Sym Pro05, 1018.pdf](2005/AMIA%20Ann%20Sym%20Pro05,%201018.pdf)

Abstract: We survey the “evolution” of the field of Medical Informatics by describing trends in volume (quantity) of Medical Informatics-indexed publications, identifying major journals of publication and their focus areas and presenting trends in impact factor scores during the 1994-2003 period. Changes in total impact-scores suggest an increasing trend of publication in journals of higher impact.

Keywords: Factor Scores, Field, Impact, Impact Factor, Impact Factor Scores, Impact Factors, Journals, Literature, Publication, Publications, Survey, Trend, Trends

? Synnestvedt, M.B., Chen, C. and Holmes, J.H. (2005), Visual exploration of landmarks and trends in the medical informatics literature. *AMIA Annual Symposium Proceedings*, 1129.

Full Text: [2005\AMIA Ann Sym Pro05, 1129.pdf](2005/AMIA%20Ann%20Sym%20Pro05,%201129.pdf)

Abstract: This study presents preliminary results from a visual study of a new dataset of forty years of citation data from publications of twelve journals in the medical informatics field covering the time period from 1964-2004. Highly cited and pivotal documents, areas of specialization within medical informatics, and emergence of research topics are visually mapped through a progressive knowledge domain visualization approach to detecting and visualizing trends and patterns in scientific literature.

Keywords: Approach, Citation, Data, Field, Informatics, Journals, Knowledge, Literature, Medical, Medical Informatics, Publications, Research, Scientific Literature, Trends, Visualization

# Title: Anadolu Kardiyoloji Dergisi-the Anatolian Journal of Cardiology

Full Journal Title: Anadolu Kardiyoloji Dergisi-the Anatolian Journal of Cardiology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Yildiz, B.S., Alkan, M.B., Gungor, H., Gul, I., Bilgin, M., Akin, M., Nalbantgil, S. and Zoghi, M. (2011), A survey for the evaluation of the training period of cardiology specialists in Turkey. *Anadolu Kardiyoloji Dergisi-the Anatolian Journal of Cardiology*, **11** (8), 661-665.

Full Text: [2011\Ana Kar Der Ana J Car11, 661.pdf](2011/Ana%20Kar%20Der%20Ana%20J%20Car11,%20661.pdf)

Abstract: Objective: To evaluate postgraduate training period, social life and problems of cardiology residents in Turkey by using a questionnaire form and to compare with the core curriculum of European Society of Cardiology for general cardiology. Methods: Overall, 529 residents of cardiology ages in range of 24-35 years (mean age: 26.5 +/- 2.0 years, 81.4% male) participated as volunteers in this cross-sectional survey study. An 86-item questionnaire form was used to evaluate the education process, capacity of knowledge and skill and social effectiveness level of participants. The questionnaire were composed both closed- and open-ended questions. The questionnaire form was filled in with the face-to-face communication method. The data of survey were compared with the core curriculum of European Society of Cardiology for general cardiology training period. Chi-square or Fischer exact test was used for statistical analysis. Results: The participants were working in various university hospitals (70.3%) and training-research (state) hospitals in 31 different provinces in Turkey (40.8% in Marmara region). They visited 40 +/- 10 outpatients and 10 +/- 5 hospitalized pts daily in the clinics. The 3-5 residents worked at the clinic on night shifts and mostly (89%) 8 or more night shifts per month were held in their first training years. During first three-years of training 76% of residents have performed echocardiography, 40.8%-transesophageal echocardiography and 10%-intraoperative echocardiography. The 84.3% of them evaluated exercise tests, 76.4%-Holter electrocardiography and 53.3%-tilt-table tests. The rate of residents working in coronary angiography laboratories was 54.3%. The 53.7% of residents performed coronary angiography and 64%-only in the 4th year of their training. The number of coronary angiography performance was under expected when compared with European Society of Cardiology curriculum. The 18.5% of residents were participated as assistant researcher in an international multi-center study and only 10% had an article published in national journals (4.3% published in Science Citation Index). The 30.6% considered the cardiology training period in their centers to be insufficient, whereas 37.4% found it partially sufficient and 31.9% sufficient. Only 32.9% of participants could dedicate time for social activities. Conclusion: According to the referred core curriculum of ESC for general cardiology the training of cardiology residents in non-invasive applications is adequate however coronary angiography applications are slightly insufficient in Turkey. In addition, the number of publications per capita is quiet low. (Anadolu Kardiyol Derg 2011; 11: 661-5).

Keywords: Activities, Analysis, Capacity, Cardiology, Citation, Communication, Education, Effectiveness, Evaluation, Exercise, Hospitals, Journals, Knowledge, Low, Male, Medicine, Methods, Process, Publications, Questionnaire, Resident Physicians, Residents, Science, Science Citation Index, Social, Statistical, Surgical Residents, Survey, Training, Turkey, University

# Title: Anaesthesia

Full Journal Title: [Anaesthesia](http://www.ingentaconnect.com/content/bsc/anae;jsessionid=5r5dr0q7o0q9g.victoria); [Anaesthesia](http://www.blackwell-synergy.com/servlet/useragent?func=showIssues&code=ana)

ISO Abbreviated Title: Anaesthesia

JCR Abbreviated Title: Anaesthesia

ISSN: 0003-2417

Issues/Year: 12

Journal Country/Territory: Germany

Language: English

Publisher: Springer Verlag

Publisher Address: 175 Fifth Ave, New York, NY 10010

Subject Categories:

Anesthesiology: Impact Factor

? Asano, M., Mikawa, K., Nishina, K., Maekawa, N. and Obara, H. (1995), The accuracy of references in *Anesthesia*. *Anaesthesia*, **50** (12), 1080-1082.

Full Text: [1995\Anaesthesia50, 1080.pdf](1995/Anaesthesia50,%201080.pdf)

Abstract: We reviewed all the references quoted in Volume 45 (1990)(n = 3967) and half the references quoted in Volume 49(1994)(n = 2183) of Anaesthesia. The references were numbered sequentially and 100 references from each year were randomly selected. Citations of non-journal articles were omitted leaving 197 citations for careful scrutiny. The authors’ names, article title, journal title, volume number, page numbers, and year were examined in each selected reference. A reference was deemed correct if each element of the citation was identical to its source. of the references examined, 32% and 41% contained one or more errors in 1990 and 1994, respectively. The elements most likely to be inaccurate were, in descending order of frequency, article title, author, and page number. There was no significant difference in the error rate between the 2 years. It is the responsibility of contributors to ensure that all references are carefully checked.

Keywords: Anesthesia, Publications, Documentation, Citation, Citations, Error, Errors, Journal, Responsibility, Source, Volume

Arrowsmith, J.E. (1996), The accuracy of references in journal articles. *Anaesthesia*, **51** (5), 517-518.

Full Text: [1996\Anesthesia51, 517.pdf](1996/Anesthesia51,%20517.pdf)

Keywords: Accuracy, Journal, Journal Articles

Asai, T. and Shingu, K. (1999), Ethical considerations in anaesthesia journals. *Anaesthesia*, **54** (2), 192-197.

Full Text: [1999\Anesthesia54, 192.pdf](1999/Anesthesia54,%20192.pdf)

Abstract: It has been shown that instructions to authors in nonanaesthesia biomedical journals often fail to require authors to state that the study was approved by an ethics committee and informed consent obtained from participants; articles also often omit mentioning these points. We examined 11 English-language journals, which are listed in the ‘Anesthesiology’ category of 1995 *SCI Journal Citation Reports*, to see whether the instructions to authors of anaesthesia journals mention the following ethical factors: approval of the study by an ethics committee, informed consent, redundant publication, fraud, authorship, conflict of interest and protection of patients’ privacy. We also examined 673 articles which appeared in these anaesthesia journals (July to December issues of 1996) to see whether they stated acquirement of ethics committee approval and informed consent. All journals addressed the avoidance of redundant publications and unjustifiable authorship. Ten journals required approval of studies and signatures from all authors, eight journals mentioned informed consent. Only seven required the disclosure of any conflict of interest and the protection of patients’ privacy. More than 90% of the articles stated that the study was approved and informed consent obtained.

? Mason, R.A. (2001), The case report - an endangered species? *Anaesthesia*, **56** (2), 99-102.

Full Text: [2001\Anesthesia56, 99.pdf](2001/Anesthesia56,%2099.pdf)

Keywords: Case Report, Endangered Species, Species

Tiefenthaler, W., Hohlrieder, M., Hauffe, H., Heidegger, Th. and Benzer, A. (2004), Proposal for a different ranking of anaesthesia journals. *Anaesthesia*, **59** (8), 831-832.

Full Text: [2004\Anesthesia59, 831.pdf](2004/Anesthesia59,%20831.pdf)

Schreiber, K., Girard, T. and Kindler, C.H. (2004), Bibliometric analysis of original molecular biology research in anaesthesia. *Anesthesia*, **59** (10), 1002-1007.

Full Text: [2004\Anesthesia59, 1002.pdf](2004/Anesthesia59,%201002.pdf)

Abstract: Molecular biology has expanded the horizons of anaesthesia during the last 20 years and has led to an increase of basic science articles that are published in the specialised anaesthetic journals or originate in anaesthetic institutions. We searched for and analysed the specific features, such as year of publication, publishing journal, and country of origin, of all such molecular biology articles stored in the MEDLINE database during the period 1986–2002. We identified 1265 original articles that used molecular biology techniques; 223 (18%) of these articles were published in anaesthetic journals and 1042 (82%) articles in 556 other biomedical journals. While in the late 1980s only a few molecular biology articles were published each year by anaesthetic institutions, worldwide this number reached approximately 200 basic science articles by the end of 2002. The USA clearly dominates the field of anaesthesia with respect to molecular biology research with 839 (66%) such articles.

Keywords: Information Science, Publishing, Molecular Biology, Academic Anesthesia, Europe, Countries, Journals, Medicine, Publication, Millennium, Primer, Life

? Pandit, J.J. (2008), Anaesthetic research in the United Kingdom: publishing or perishing? *Anaesthesia*, **63** (3), 225-227.

Full Text: [2008\Anaesthesia63, 225.pdf](2008/Anaesthesia63,%20225.pdf)

Keywords: Publishing, Research, United Kingdom

? Feneck, R.O., Natarajan, N., Sebastian, R. and Naughton, C. (2008), Decline in research publications from the United Kingdom in anaesthesia journals from 1997 to 2006. *Anaesthesia*, **63** (3), 270-275.

Full Text: [2008\Anaesthesia63, 270.pdf](2008/Anaesthesia63,%20270.pdf)

Abstract: We undertook this survey to identify the trend in the published output of original research in anaesthesia emanating from the United Kingdom (UK) in a 10-year period from 1997 to 2006, inclusive. We examined seven major anaesthetic journals for each of the 10 years, and four other specialist journals for the years 1997, 2000, 2003 and 2006. We included papers on experimental research, randomised controlled clinical trials, large observational studies and case series, formal equipment and apparatus assessments, but we excluded editorials, comments, reviews including systematic reviews, special articles, small case series and case reports, questionnaire surveys of clinical practice and correspondence. We found a highly significant reduction in published research output from the UK in the period under study (% change per year; -5.7 (95% CI -7.4 to -4.0), a trend which was significantly different (p < 0.001) from the trend of changes in research publications worldwide (-1.0% change per year; 95% CI -1.7 to 0.0). We discuss the implications of these findings for UK anaesthesia research strategy.

Keywords: Anaesthesia, Assessments, Case Reports, Changes, Clinical, Clinical Practice, Clinical Trials, Equipment, Experimental, Journals, Observational, Observational Studies, Papers, Practice, Publications, Questionnaire, Randomised, Reduction, Research, Reviews, Small, Survey, Surveys, Systematic Reviews, Trend, UK, United Kingdom

? White, S.M. and Walker, E. (2008), Difficulties faced by ‘non-academic’ researchers. *Anaesthesia*, **63** (9), 1017.

Full Text: [2008\Anesthesia63, 1017.pdf](2008/Anesthesia63,%201017.pdf)

? Walker, E., Hankins, M.C. and White, S.M. (2009), The effect of the European Clinical Trials Directive on published drug research in anaesthesia. *Anaesthesia*, **64** (9), 984-989.

Full Text: [2009\Anesthesia64, 984.pdf](2009/Anesthesia64,%20984.pdf)

Abstract: P>The clinical indications for anaesthetic drugs are developed through peer-reviewed publication of clinical trials. We performed a bibliometric analysis of all human research papers reported in nine general anaesthesia journals over 6 years (n = 6489), to determine any effects of the 2004 European Clinical Trials Directive on reported drug research in anaesthesia originating from Europe and the United Kingdom. We found 89% studies involved patients and 11% volunteers. of 3234 (50%) drug studies, 96% were phase IV (post-marketing) trials. Worldwide, the number of research papers fell by 3.6% (p < 0.004) in the 3 years following introduction of the European Clinical Trials Directive (5% Europe, 18% United Kingdom), and drug research papers fell by 12% (p < 0.001; 15% Europe, 29% United Kingdom). The introduction of the Clinical Trials Directive has therefore coincided with a decline in European drug research, particularly that originating from the United Kingdom. We suggest a number of measures researchers could take in response, and we propose a simplification of the application process for phase IV clinical trials, emphasising patient risk assessment.

Keywords: Bibliometric Analysis, Cancer, Conduct, Future, Impact, Long, Medical-Journal-Editors, Publications, Registration, Research, UK, United-Kingdom

? Bould, M.D., Boet, S., Riem, N., Kasanda, C., Sossou, A. and Bruppacher, H.R. (2010), National representation in the anaesthesia literature: A bibliometric analysis of highly cited *Anaesthesia* journals. *Anaesthesia*, **65** (8), 799-804.

Full Text: [2010\Anesthesia65, 799.pdf](2010/Anesthesia65,%20799.pdf)

Abstract: P>While previous studies have investigated the country of origin of anaesthetic publications, they have generally used a medline computer search to identify original articles and have often excluded non-English language articles. We undertook a hand-search of journals in the Journal Citation Reports (R) using the subject category of Anesthesiology. We quantified the number of original articles, editorials, review articles, case reports and correspondence attributed to each country. We also calculated the proportion of articles of each type from countries of each national income category. We analysed 9684 articles published in 2007 and 2008. The United States published more original articles than any other country. High-income countries published 89.2% of original articles, middle-income countries 10.5%, and low-income countries just 0.3%. There were more articles published by middle-income countries during the study period than a decade earlier, notably from Turkey, China and India. We discuss barriers to publications from low-income countries.

Keywords: Bias, Departments, Developing-Countries, India, Publications

? White, S.M. (2011), Self-plagiarism. *Anaesthesia*, **66** (3), 220-221.

Full Text: [2011\Anesthesia66, 220.pdf](2011/Anesthesia66,%20220.pdf)

Keywords: Anesthesia, Consent, Ethics

? Pagel, P.S. and Hudetz, J.A. (2011), An analysis of scholarly productivity in United States academic anaesthesiologists by citation bibliometrics. *Anaesthesia*, **66** (10), 873-878.

Full Text: [2011\Anesthesia66, 873.pdf](2011/Anesthesia66,%20873.pdf)

Abstract: The h-index is used to evaluate scholarly productivity in academic medicine, but has not been extensively used in anaesthesia. We analysed the publications, citations, citations per publication and h-index from 1996 to date using the Scopus (R) database for 1630 (1120 men, 510 women) for faculty members from 24 randomly selected US academic anaesthesiology departments The median (interquartile range [range]) h-index of US academic anaesthesiologists was 1 [0-5 (0-44)] with 3 [0-18 (0-398)] total publications, 24 [0-187 (0-8515)] total citations, and 5 [0-14 (0-252)] citations per publication. Faculty members in departments with National Institutes of Health funding were more productive than colleagues in departments with little or no government funding. The h-index increased significantly between successive academic ranks concomitant with increases in the number of publications and total citations. Men had higher median h-index than women concomitant with more publications and citations, but the number of citations per publication was similar between groups. Our results suggest that h-index is a reasonable indicator of scholarly productivity in anaesthesia. The results may help comparisons of academic productivity across countries and may be used to assess whether new initiatives designed to reverse recent declines in academic anaesthetic are working.

Keywords: Anaesthesia, Anaesthesiology, Analysis, Bibliometrics, Citation, Citations, Faculty, Funding, h Index, h-Index, Health, Impact, Journals, Kingdom, Medicine, Men, Physician Scientists, Productivity, Publication, Publications, Radiology, Scopus, Time, US, Women

# Title: Anaesthesia and Intensive Care

Full Journal Title: Anaesthesia and Intensive Care

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0310-057X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Teoh, D.C.A. and Schramm, B. (2006), Changes in clinical research in anaesthesia and intensive care from 1974-2004. *Anaesthesia and Intensive Care*, **34** (6), 753-757.

Full Text: [2006\Ana Int Car34, 753.pdf](2006/Ana%20Int%20Car34,%20753.pdf)

Abstract: The purpose was to identify how the quality of anaesthesia research has improved from articles published in Anaesthesia and Intensive Care over 25 years. Original papers were included during the periods 1974-1978 and 2000-2004. Each article was classified according to principal research designs and the two five-year periods were compared. All interventional trials were evaluated according to the following a priori criteria: author number; ethics approval; informed consent; competing financial interest; eligibility criteria; sample size calculation; method of randomization; patients accounted for, blind assessment of outcome; adverse outcomes; statistical method stated; type I error; type II error; and anaesthetic department of origin. Comparisons of above criteria were made between the two groups rising chi-square test or Fischer’s exact test. Two-hundred-and-ninety-two articles were reviewed in 1974-1978 and 529 articles were reviewed in 2000-2004. Animal/laboratory articles decreased from 17.47% to 12.28% (P = 0.05). Review articles decreased from 34.35% to 10.4% (P < 0.0001). Descriptive trials increased from 28.4% to 52.72% (P < 0.0001). Interventional trials increased from 18.84% to 22.31% (P = 0.269). Uncontrolled clinical trials decreased from 27.27% to 12.71%, non-randomized controlled trials decreased from 50.91% to 7.63%, and randomized controlled trials increased from 21.82% to 79.66% (P < 0.0001). All interventional trials criteria improved and were statistically significant except competing financial interest, method of randomization, patients accounted for, and type II error: The quality of anaesthetic research has improved in Anaesthesia and Intensive Care over the past 30 years. However, there is still room for improvement.

Keywords: Adverse Outcomes, Anaesthesia, Assessment, Calculation, Care, Chi-Square, Clinical, Clinical Research, Clinical Trials, Consent, Criteria, Error, Ethics, Improvement, Informed Consent, Intensive Care, Origin, Outcome, Outcomes, P, Papers, Patients, Purpose, Quality, Quality of, Randomization, Randomized, Randomized Controlled Trials, Research, Sample Size, Size, Type II Error

? Li, Z., Qiu, L.X., Wu, F.X., Yang, L.Q., Sun, S. and Yu, W.F. (2011), Scientific publications in international anaesthesiology journals: A 10-year survey. *Anaesthesia and Intensive Care*, **39** (2), 268-273.

Full Text: [2011\Ana Int Car39, 268.pdf](2011/Ana%20Int%20Car39,%20268.pdf)

Abstract: Significant growth has been seen in the field of anaesthesiology in recent decades. The current geographic distribution of the publications on anaesthesia research may be different from ten years ago. We performed this literature survey to examine the national origin of articles published in international anaesthesiology journals and to evaluate their contribution to anaesthesia research. Articles published in 18 major anaesthesiology journals from 2000 to 2009 were identified from the PubMed database and the Science Citation Index. A total of 30,191 articles were published in the selected 18 journals from 2000 to 2009. The country responsible for the largest number of articles was the United States of America (29.4%), followed by the United Kingdom, Germany, Japan, Canada, Australia and France. Denmark, Switzerland and Finland had the largest number of articles per capita. Anesthesia & Analgesia published the most number of articles from 2000 to 2009, followed by Anesthesiology, Pain and the British Journal of Anaesthesia. The numbers of clinical studies and randomised controlled trials decreased markedly from 2000 to 2009.

Keywords: Anaesthesia, Anaesthesiology, Articles, Australia, Bibliometric Analysis, Canada, Citation, Clinical, Clinical Studies, Country, Database, Denmark, Distribution, Field, Finland, France, Germany, Growth, International, Japan, Journal, Journals, Language, Literature, Mar, Origin, Pain, Publications, Pubmed, Randomised, Randomised Controlled Trials, Recent, Research, Science, Science Citation Index, Survey, Switzerland, United Kingdom, United States, Web of Science

# Title: Anaesthesist

Full Journal Title: [Anaesthesia](http://www.ingentaconnect.com/content/bsc/anae;jsessionid=5r5dr0q7o0q9g.victoria); [Anaesthesia](http://www.blackwell-synergy.com/servlet/useragent?func=showIssues&code=ana)

ISO Abbreviated Title: Anaesthesist

JCR Abbreviated Title: Anaesthesist

ISSN: 0003-2417

Issues/Year: 12

Journal Country/Territory: Germany

Language: English

Publisher: Springer Verlag

Publisher Address: 175 Fifth Ave, New York, NY 10010

Subject Categories:

Anesthesiology: Impact Factor

? Salomon, F. (1987), Responsible decisions: Guidelines for managing critical situations in intensive-care medicine. *Anaesthesist*, **36** (3), 97-101.

Full Text: 1987\Anaesthesist36, 97.pdf

? Lindner, U.K. and Oehm, V. (1997), The magic of the impact factor - Unmasking of a phenomenon. *Anaesthesist*, **46** (1), 1-2.

Full Text: 1997\Anaesthesist46, 1.pdf

Keywords: Impact, Impact Factor

? Garfield, E. (1998), The Impact Factor and its correct usage. *Anaesthesist*, **47** (6), 439-440.

Full Text: [1998\Anaesthesist47, 439.pdf](1998/Anaesthesist47,%20439.pdf)

? Dick, W. (2000), Research - publications - Impact Factor - “industry-method” corruption. Thoughts on a German phenomenon. *Anaesthesist*, **49** (5), 371-372.

Full Text: [2000\Anaesthesist49, 371.pdf](2000/Anaesthesist49,%20371.pdf)

Keywords: Corruption, Publications

? Schreiber, K. and Kindler, C.H. (2005), Bibliometric analysis of anaesthetic molecular biology research in Germany, Austria and Switzerland. *Anaesthesist*, **54** (11), 1094-1099.

Full Text: [2005\Anaesthesist54, 1094.pdf](2005/Anaesthesist54,%201094.pdf)

Abstract: Back ground. In the last 20 years molecular biology has expanded the horizons of medical research including anaesthesia. Preoperative identification of genetic disorders relevant to anaesthesia or increased perioperative risk will be available in the near future using molecular biology techniques. There has been a global increase of such publications, but the contributions from Germany, Switzerland and Austria are unknown. Material and methods. An internet-based medline search was used to an a lyse specific features such as year of publication, journal and origin of molecular biology articles produced by German, Swiss and Austrian anaesthesia institutions from 1988 to 2002. Results. During the study period 121 articles from German institutions were published, 18 from Switzerland and 5 from Austria, corresponding to 10%, 1.5% and 0.4%, respectively, of global publications. In Germany the number of anaesthesia publications with a molecular biology content has continuously increased, but in Switzerland and Austria the numbers have remained constant. The majority of articles were published in high-impact non-anaesthesia journals. Discussion and conclusion. The results of this study show the quantitative development of molecular biology research that has been done in anaesthesia institutions in Germany, Switzerland and Austria from 1988 to 2002. A continuous increase of publications with a molecular biology con tent occurred only in Germany.

Keywords: Academic Anesthesia, Anaesthesia, Bibliometric, Bibliometric Analysis, Cardiopulmonary Bypass, Development, Germany, Information Science, Intensive-Care, Journals, Medical, Medicine, Molecular Biology, Platelet Pl(A2) Polymorphism, Publication, Publications, Research, Risk, University Departments

# Title: Anais da Academia Brasileira de Ciencias

Full Journal Title: [Anais da Academia Brasileira de Ciencias](http://www.scielo.br/scielo.php?script=sci_serial&pid=0001-3765&lng=en&nrm=iso)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Packer, A.L. and Meneghini, R. (2006), Articles with authors affiliated to Brazilian institutions published from 1994 to 2003 with 100 or more citations: I - The weight of international collaboration and the role of the networks. *Anais da Academia Brasileira de Ciências*, **78** (4), 841-853.

Full Text: [2006\Ana Aca Bra Cie78, 841.pdf](2006/Ana%20Aca%20Bra%20Cie78,%20841.pdf)

Abstract: Articles with 100 citations or more in the scientific literature and with at least one author with Brazilian affiliation, were identified in the Thomson-ISI (Institute for Scientific Information) Web of Science bibliometric database, covering a 10-year period, from 1994 to 2003; 248 (0.23%) out of a total of 109,916 articles with Brazilian affiliation were identified. This study was primarily carried out to identify thematic nuclei of excellence in research that had major impact in the international literature (Meneghini and Packer 2006). The regional and institutional affiliation distributions of these articles follow approximately that of the total of Brazilian articles in the ISI database. However, some significant deviations are observed derived from the outstanding performance of a few groups responsible for the publication of the HC-ISI (Highly cited ISI) papers. The international collaboration and the network organization of work played a fundamental role in these results. It is evident that the role played by organizations in research networks as well as the international collaborations exerted strong influence, in the impact of these articles, although with distinct amplitude in the different fields.

Keywords: Authors, Authorship, Bibliometric, Bibliometry, Citations, Collaboration, Database, Editing, Statistics And Numerical Data, Impact, Impact Factor, Information Service, Journals, Rules, Literature, Papers, Research, Science, Scientific Collaboration, Scientific Network, Scientometrics, Storage And Retrieval Information, Web of Science

? Meneghini, R. and Packer, A.L. (2006), Articles with authors affiliated to Brazilian institutions published from 1994 to 2003 with 100 or more citations: II - Identification of thematic nuclei of excellence in Brazilian science. *Anais da Academia Brasileira de Ciências*, **78** (4), 855-883.

Full Text: [2006\Ana Aca Bra Cie78, 855.pdf](2006/Ana%20Aca%20Bra%20Cie78,%20855.pdf)

Abstract: Articles with 100 citations or more in the scientific literature and with at least one author with Brazilian affiliation, were identified in the Thomson-ISI (Institute for Scientific Information) Web of Science bibliometric database covering a 10-year period, from 1994 to 2003 (see Packer and Meneghini 2006); 248 (0.23%) out of a total of 109,916 articles with Brazilian affiliation were identified. This study was primarily carried out to identify thematic nuclei of excellence in research that had major impact in the international literature. Twelve of these nuclei in the fields of Biomedicine, Medicine, Biology, Physic, Chemistry and Astronomy were considered outstanding and their genesis and development were described. The weight of factors such as international collaboration and network organization are distinct in these areas and the reasons for that are discussed.

Keywords: Bibliometric, Bibliometrics, Brazil, Citations, Collaboration, DEC, Development, Impact, Impact Factor, Indicators, Information Services, Information Storage and Retrieval, Institute for Scientific Information, Institutions, International Collaboration, Journal Quality, Research, Science, Scientific Institutions, Scientific Policy, Scientometrics, Web of Science

? Kellner, A.W.A. and Ponciano, L.C.M.O. (2008), H-index in the Brazilian Academy of Sciences - comments and concerns. *Anais da Academia Brasileira de Ciências*, **80** (4), 771-781.

Full Text: [2008\Ana Aca Bra Cie80, 771.pdf](2008/Ana%20Aca%20Bra%20Cie80,%20771.pdf)

Abstract: Bibliometric parameters have been used in order to evaluate a scientist’s performance. The h-index has been gradually accepted as the most adequate parameter for this purpose. To have an idea of this index among Brazilian scientists, we performed an analysis of this parameter for the full members of the Brazilian Academy of Sciences (BAS). The h-index of 402 members listed in 10 distinct categories by the BAS was determined, cross-checked with the curriculum vitae of each of them listed at the Plataforma Lattes database (CVL) and compared with each other. Despite the large production, mostly in journals without impact factor, the h-indexes among the BAS members are comparatively low and show a large variation in all of the 10 categories, particularly in Biomedical and Physical sciences. The highest average of h-index values was found in Biomedical, Health and Chemical sciences; the lowest values were found in Human sciences where this index is meaningless. Several problems due to the trend that new and “fresh” publications need be constantly produced (the “bakery-effect”) are discussed. This study points to the need of developing countries such as Brazil to invest in national scientific journals in order to make them gradually part of the mainstream journals. This would have a positive effect on bibliometric parameters of Brazilian researchers, including the h-index.

Keywords: Analysis, Articles, Bibliometric, Bibliometric Indexes, Brazil, Brazilian, Brazilian Academy of Sciences, Citations, Comments, Curriculum, Database, Developing, Developing Countries, h Index, h-Index, Impact, Impact Factor, Index, Journals, National, Performance, Production, Publications, Purpose, Sciences, Scientific Journals, Scientists, Scientometrics, Trend, Values

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Full Text: [2011\Ana Aca Bra Cie83, 745.pdf](2011/Ana%20Aca%20Bra%20Cie83,%20745.pdf)

Abstract: Several genome sequencing programs were launched in Brazil by the end of the nineties and the early 2000s. The most important initiatives were supported by the ONSA program (http://watson.fapesp.br/onsa/Genoma3.htm) and aimed at gaining domain in genomic technology and bringing molecular biology to the state of art. Two main sets of data were collected in the 1996-2007 period to evaluate the results of these genome programs: the scientific production (Scopus and Web of Science databases) and the register of patents (US Patent and Trademark Office), both related to the progress of molecular biology along this period. In regard to the former, Brazil took a great leap in comparison to 17 other developed and developing countries, being only surpassed by China. As to the register of patents in the area of molecular biology, Brazil’s performance lags far behind most of the countries focused in the present study, confirming the Brazilian long-standing tendency of poor achievements in technological innovations when compared with scientific production. Possible solutions to surpass this inequality are discussed.

Keywords: Biology, Brazil, China, Databases, Developing Countries, Genomics, Molecular Biology, Multidisciplinary, Science Assessment, Scientometrics, Scopus, Sequence, US, Web of Science

# Title: Annalen der Chemie und Pharmacie

Full Journal Title: Annalen der Chemie und Pharmacie

ISO Abbreviated Title: Ann. Chem. Pharm.

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: #####

? Henneberg, W. and Stohmann, F. (1858), Ueber das verhalten der ackerkrume gegen ammoniak und ammoniakslze. *Annalen der Chemie und Pharmacie*, **107**, 152-174.

Notes: “Henneberg and Stohmann looked at the effect of concentration on the qualitity of ammonium adsorbed by soils, and by doing so became the first to measure a solute-solid adsorption isotherm. They also showed that there were differences in adsorption of ammonium from different salts, in the order H2PO4- > SO42- > Cl- = NO3-, an observation that took many years to understand.” As mentioned in Boedeker, C.H.D. (1859), Ueber das Verhältnis zwischen Masse und Wirkung beim Eontact ammoniakalischer Flüssig leiten mit Ackererde und mit kohlensanre Kalk. *Journal für Landwirtschaft*, **7**, 48-58.

# Title: Anales Españoles de Pediatria

Full Journal Title: [Anales Espanoles de Pediatria](http://dialnet.unirioja.es/servlet/revista?codigo=2479)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Vila, A.G. (1978), Pediatric bibliometrics. 1. Descriptive statistics on pediatric books and pamphlets. *Anales Españoles de Pediatria*, **11** (4), 295-300.

Keywords: Bibliometrics

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Keywords: Bibliometrics

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Keywords: Bibliometrics

# Title: Anales de Farmacia Hospitalaria

Full Journal Title: Anales de Farmacia Hospitalaria

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1130-6343

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Santos Ramos, B., Artacho Criado, S., Clopes Estela, A., Guerrero Aznar, M.D., Ferriols Lisart, R., Martinez Bengoechea, M.J., Ordovas Baines, J.P. and Otero Lopez, M.J. (2007), The international situation and the *Farmacia Hospitalaria* journal. *Anales de Farmacia Hospitalaria*, **31** (3), 137-140.

Keywords: International

# Title: Anales Otorrinolaringologicos Ibero-Americanos

Full Journal Title: Anales Otorrinolaringologicos Ibero-Americanos

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Pisonero Ruiz, M.P. (1988), Statistic and sociometric analysis of the articles of the otologic review issued from XVI century till 1932. *Anales Otorrinolaringologicos Ibero-Americanos*, **15** (3), 307-342.

? Pisonero, R.P. (1988), Part three development of the otologic literature Price’s law. *Anales Otorrinolaringologicos Ibero-Americanos*, **15** (4), 409-428.

Abstract: The author discusses the results of an analytic and sociometric study of all the books and review articles on Otology, from the XVIth century up to 1932, taking as sample all books and papers indexed in the “Index-Catalogue of the Library of the Surgeon-General’s Office” in its first three series. By creating a catalogue of 15,605 publications using descriptive statistics and bibliometrical analysis, the author verified results satisfying the following laws: Lotka’s Law relating to the author’s productivity; Bradford’s Law which measures distribution of the publications and finally; Price’s Law which registers the increase of scientific literature.

# Title: Anales de Quimica

Full Journal Title: Anales de Quimica

ISO Abbreviated Title: An. Quim.

JCR Abbreviated Title: An Quim

ISSN: 1130-2283

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mendioroz, S. and Hermana, E. (1971), Adsorption of ammonia on solid acid catalysts - kinetic study. *Anales de Quimica*, (1), 105-114.

? Bockris, J.O. and Habib, M.A. (1975), Isotherm for ionic adsorption from solution. *Anales de Quimica*, **71** (11-1), 952-971.

? Garcia, A.V., Sanchez, M.V., Viciana, M.S. and Pradas, E.G. (1992), Adsorption of meta-phenylenediamine from aqueous-solution on activated sepiolite. *Anales de Quimica*, **88** (1), 62-65.

Abstract: The adsorption process of m-Fenilendiamine, from aqueous solution at 20-degrees-C, on heat treated sepiolite has been studied. With regard to the kinetic study, the process has resulted in being second order in relation to the vacant active centres. On the other hand, the value of the specific rate constant is k = 1.42×10-4 g.mol-1s-1.

The adsorption isotherm may be classified as L-type (Giles classification) and the value of the adsorption capacity has been calculated from the Langmuir equation applied to the experimental data points. The adsorption capacity and specific surface area values of the sepiolite in relation to the adsorption of m-Fenilendiamine are Xm = 1.37×10-6 mol.g-1 and S = 0.35 m2g-1, respectively.

# Title: Anales de Quimica-International Edition

Full Journal Title: Anales de Quimica-International Edition

ISO Abbreviated Title: An. Quim.-Int. Ed.

JCR Abbreviated Title: An Quim-Int Ed

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Cortes, J., Droguett, S. and Sturzene, U. (1971), Extension of bet theory for determination of universal isotherm of adsorption. *Anales de Quimica-International Edition*, **67** (11), 907-??.

# Title: Analusis

Full Journal Title: [Analusis](http://sdos.ejournal.ascc.net/cgi-bin/sciserv.pl?collection=journals&journal=03654877)

ISO Abbreviated Title: Analusis

JCR Abbreviated Title: Analusis

ISSN: 0365-4877

Issues/Year: 10

Journal Country/Territory: France

Language: Multi-Language

Publisher: E D P Sciences

Publisher Address: 7, Ave DU Hoggar, Parc D Activites Courtaboeuf, BP 112, F-91944 Les Ulis Cedexa, France

Subject Categories:

Chemistry, Analytical: Impact Factor 0.520, / (2001)

? Quoniam, L., Dou, H., Hassanaly, P. and Mille, G. (1991), Bibliometrics and chemistry - an example on fatty-acids and phospholipides. *Analusis*, **19** (1), I48-I52.

Full Text: Analusis19, I48

Kister, J., Pieri, N., Quoniam, L. and Dou, H. (1995), Bibliometric tools applied to analytical chemistry. Example of UV fluorescence spectroscopy. *Analusis*, **23** (10), 518-522.

Full Text: [1995\Analusis23, 518.pdf](1995/Analusis23,%20518.pdf)

Abstract: Scientific information (SI) is becoming a real strategic tool for research management. Bibliographical data analysis can be used to locate the research network of a subject, a used methodology or a scientific approach in national, European or international scientific fields. SI appears to be one of the deciding factors, including parameters such as the initial investment, the cost of use and the specification. in the scope of the choice or the development of analytical techniques in chemistry. Scientific information is used to determine the interest or the relevance of a technique in laboratory topics or in the relevant research institution areas (university, CNRS, itc.) A bibliographical database allows to identify local, national or international teams which develop the same scientific approach in the same subject or in a similar field of work. Analytical techniques can also be compared to the other methods in terms of relevance, competition or as complementary tools. The information provided about the chosen technique allows us to be situated in the innovative or the routine field. Therefore, UV fluorescence appears to be an analytical technique well suited to the study of polyaromatic hydrocarbons in all environmental media. As a matter of fact, simplified signals can be obtained from one of the UV fluorescence techniques, known as the synchronous UV fluorescence.

Keywords: Analytical Chemistry, Bibliometric, Bibliometrics, Chemistry, Coal, Constituents, Data Analysis, Database, Development, Information Science, Management, Oxidation, Research, UV Fluorescence

Baretta, A., Loigerot, J., Dos Santos, R. and Dou, H. (1996), Economic intelligence and bibliometric treatments in chemistry: Alkylpolyglucosides. *Analusis*, **24** (9-10), M42-M46.

Full Text: [1996\Analusis24, M42.pdf](1996/Analusis24,%20M42.pdf)

Keywords: Bibliometric, Chemistry, Intelligence

# Title: Analyst

Full Journal Title: [Analyst](http://www.rsc.org/is/journals/current/analyst/anlpub.htm), [Analyst](http://uk.jstor.org/browse/07417918?frame=noframe&userID=527bfbc0@ic.ac.uk/018258cb3a95110217e8942d&dpi=3&config=jstor)

ISO Abbreviated Title: Analyst

JCR Abbreviated Title: Analyst

ISSN: 0003-2654

Issues/Year: 12

Journal Country/Territory: England

Language: English

Publisher: Royal Soc Chemistry

Publisher Address: Thomas Graham House, Science Park, Milton Rd, Cambridge CB4 0WF, Cambs, Eng

Subject Categories:

Chemistry, Analytical: Impact Factor

Walker, E.A. and Morton, P. (1964), Application of Freundlich isotherm to adsorption of sugars from solution by column of charcoal. *Analyst*, **89** (1061), 512-519.

Full Text: [1960-80\Analyst89, 512.pdf](1960-80/Analyst89,%20512.pdf)

Abstract: Wilson’s theory of chromatography has been used to derive an equation for determining the lengths of adsorption bands of solute produced when a solution, whose adsorption characteristics can be expressed by the Freundlich adsorption isotherm, is passed through an adsorbing column. The practical problems posed in extending the principle to the measurement of the “breakthrough” volume have been overcome by using two columns of different length. This has led to a method for determining the adsorption isotherm by column methods and in principle to a method of determining solute concentration.

Austin, F.E., Brown, J.G., Dollimore, J., Freedman, C.M. and Harrison, B.H. (1971), The use of partial-pressure mass spectrometry in the study of the thermal desorption and oxidation of carbon and graphite. *Analyst*, **96** (1139), 110-116.

Full Text: [A\Analyst96, 110.pdf](A/Analyst96,%20110.pdf)

Abstract: A partial-pressure mass-spectrometer system is described for measuring thermally desorbed species from solid surfaces. The system evaluates not only the ratio of masses present in the gaseous phase but also relates the specific mass (mg g–1 of solid) desorbed or decomposed during thermal treatment. The extension of the method to include oxidation studies is also described.A study has been made of the initial evolution of gases from graphitic and non-graphitic carbons. These range in properties from a ground graphite of specific surface 103 m2 g–1 to a nuclear-type graphite of 0.6 m2 g–1. A study of a non-graphitic carbon, saran charcoal, of molecular-sieve type is also included.The formation of surface oxide on a clean surface at low pressures is evaluated together with the resultant thermal decomposition of the surface oxide. The results from this paper together with other published work on graphites are reviewed and used to illustrate the application of the results of thermal desorption to oxidation studies on carbons and graphites.

Ridout, P.S., Jones, H.R. and Williams, J.G. (1988), Determination of trace elements in a marine reference material of lobster hepatopancreas (TORT-1) using inductively coupled plasma mass spectrometry. *Analyst*, **113** (9), 1383-1386.

Full Text: [1988\Analyst113, 1383.pdf](1988/Analyst113,%201383.pdf)

Abstract: Sixteen elements (V, Cr, Mn, Fe, Ni, Co, Cu, Zn, As, Se, Sr, Mo, Cd, Sn, Hg and Pb) were determined in acid digests of the marine reference material TORT-1 using inductively coupled plasma mass spectrometry. Accurate results were obtained for most elements although some signal suppression was observed which was easily overcome by dilution of the samples. Corrections were made for interferences arising from chloride in the samples using isotope ratios of 35Cl and 37Cl.

Friel, J.K., Skinner, C.S., Jackson, S.E. and Longerich, H.P. (1990), Analysis of biological reference materials, prepared by microwave dissolution, using inductively coupled plasma mass-spectrometry. *Analyst*, **115** (3), 269-273.

Full Text: [1990\Analyst115, 269.pdf](1990/Analyst115,%20269.pdf)

Abstract: A procedure has been developed for the analysis of biological materials by inductively coupled plasma mass spectrometry (ICP-MS). Fast, efficient and complete sample digestion is achieved by a combined microwave-nitric acid/open beaker-nitric acid-hydrogen peroxide procedure. The ICP-MS analysis is performed with an on-line five-element internal standard to correct for matrix and instrumental drift effects. Results are presented for 24 elements in three biological reference materials (National Institute of Standards and Technology Standard Reference Materials 5277a Liver and 1566 Oyster and International Atomic Energy Agency Certified Reference Material H4 Animal Muscle). For all elements significantly above the detection limit and reagent blank concentrations, good agreement exists between ICP-MS and certified values.

Notes: highly cited

? Chatterjee, A., Das, D., Mandal, B.K., Chowdhury, T.R., Samanta, G. and Chakraborti, D. (1995), Arsenic in ground water in six districts of West Bengal, India: The biggest arsenic calamity in the world. Part I. Arsenic species in drinking water and urine of the affected people. *Analyst*, **120** (3), 643-650.

Full Text: [1995\Analyst120, 643.pdf](1995/Analyst120,%20643.pdf)

Abstract: Arsenic in ground water has been found above the maximum permissible limit in six districts of West Bengal covering an area of 34 000 km2 with a population of 30 million, At present 37 blocks of these six districts by the side of the River Ganga are affected and about 800 000 people from 312 villages/wards are drinking arsenic contaminated water and amongst them at least 175 000 people are showing arsenical skin lesions. The source of arsenic is geological. We have analysed thousands of tube-well water samples from these six districts for four arsenic species namely, arsenite, arsenate, monomethylarsonic acid (MMAA) and dimethylarsinic acid (DMAA). We could detect no MMAA or DMAA in any of these samples. In urine, DMAA and MMAA are the predominant species along with arsenite and arsenate. The techniques we used for the determination and speciation of arsenic are: (i) separation of arsenite and arsenate from water by sodium diethyldithiocarbamate in chloroform followed by FI-HGAAS; (II) spectrophotometry using Ag-DDTC in chloroform with hexamethylenetetramine as absorbing solution; (III) ion-exchange separation of arsenite and arsenate from water followed by FI-HGAAS; and (IV) for analysis of inorganic arsenic and its metabolites in urine, FI-HGAAS was used after separation of the species by a combined cation-anion-exchange column. Total arsenic urine was determined by FI-HGAAS after acid decomposition, The most toxic species, arsenite, is present in ground water at about 50% of the total arsenic level, and more than 90% of the total arsenic in urine is inorganic arsenic and its metabolites.

Keywords: Arsenic Contamination, Ground Water, Flow Injection-Hydride Generation Atomic Absorption Spectrometry, Arsenic Species, Urine, Performance Liquid-Chromatography, Atomic-Absorption Spectrometry, Plasma Mass-Spectrometry, HPLC-Hg-ICP, Occupational Exposure, Calcutta Pollutants, Blackfoot Disease, Speciation, Separation, Cancer

Jervis, R.E., Krishnan, S.S., Ko, M.M., Vela, L.D., Pringle, T.G., Chan, A.C. and Xing, L. (1995), Biological incinerator emissions of toxic inorganics, their residues and their availability. *Analyst*, **120** (3), 651-657.

Full Text: [1995\Analyst120, 651.pdf](1995/Analyst120,%20651.pdf)

Abstract: Air particulate emissions from incinerators and the residual solids remaining as fly ash and bottom ash have been characterized physically and chemically to examine trace and minor elements and their speciation by a combination of radioanalytical, SEM and radiotracer techniques, Repeated (n = 25 and 35), size-selective sampling of airborne particulate matter downwind from medical and sewage sludge incinerators in Toronto was performed and the results were confirmed by direct analysis of stack fly ash, It was found that Ag, Cd, Cl, Cr, Sb and Zn are consistently elevated in hospital biomedical incinerator emissions and As, Br, I and Se in sewage incinerators; these elements were significantly elevated in respirable particles of submicron sizes, as also is environmental Pb. Concentration patterns of these five to six strongly correlated elements serve as a ‘signature’ of incinerator emissions and also are used to quantify the fraction of local respirable aerosol due to incineration. The fidelity of particle-size separation and classification by cascade impacters was directly verified by (i) direct particle-size measurement, stage-by-stage using SEM, and (II) indirectly, by observing log-normal size distributions over the range 0.27 µm, distributions known to be characteristic of random aerosols, Since the bioavailability of toxic trace elements, either as enriched particulate emissions or as result of incinerator residue placed in landfill disposal sites, depends on their relative solubility by lung fluids and/or ambient rainfall or groundwaters, several air filters and ash samples were subjected to controlled leachability tests. Variable fractions of trace elements (about 0-50%) on air filters and in ash were solubilized under simulated, realistic leaching conditions (pH 4-5), particularly halides, cadmium, chromium and zinc. This indicates a vaporization/condensation model of incineration and surface loadings of incineration particles with chloro-complexes and other simple cations.

Keywords: Biological Incinerators, Toxic Trace Element, Instrumental Neutron Activation Analysis, Particle-Induced X-Ray Emission, Aerosol Receptor Modeling, Leachability of Ash, Leachability, Speciation, Elements

Notes: Highly cited

? Das, D., Chatterjee, A., Mandal, B.K., Samanta, G., Chakraborti, D. and Chanda, B. (1995), Arsenic in ground water in six districts of West Bengal, India: The biggest arsenic calamity in the world. Part 2. Arsenic concentration in drinking water, hair, nails, urine, skin-scale and liver tissue (biopsy) of the affected people. *Analyst*, **120** (3), 917-924.

Full Text: [1995\Analyst120, 917.pdf](1995/Analyst120,%20917.pdf)

Abstract: In six districts of West Bengal arsenic has been found in ground water above the maximum permissible limit recommended by the WHO of 0.05 mg l-1. This water is used by the villagers for drinking, cooking and other household purposes. These six districts have an area of 34 000 km2 and hold a population of 30 million. Over the last five years we have surveyed only a few small areas of these six affected districts and our survey revealed that, at present, at least 800 000 people from 312 villages in 37 blocks are drinking contaminated water and more than 175 000 people are showing arsenical skin lesions that are the late stages of manifestation of arsenic toxicity. Most of the three stages of arsenic-related clinical manifestations are observed amongst the affected people. The common symptoms are conjunctivitis, melanosis, depigmentation, keratosis and hyperkeratosis; cases of gangrene and malignant neoplasms are also observed. The source of arsenic is geological. We have analysed thousands of arsenic contaminated water samples. Most of the water samples contain a mixture of arsenite and arsenate and in none of them could we detect methylarsonic of dimethylarsinic acid. We have also analysed a large number of urine, hair and nail samples, several skin-scales and some liver tissues (biopsy samples) of the people drinking the arsenic contaminated water and showing arsenical skin lesions. Flow injection hydride generation atomic absorption spectrometry (FI-HGAAS) was used for the analysis of hair, nails, urine and skin-scale after decomposition by various techniques. The liver tissues were analysed by Zeeman corrected-ETAAS using a few milligrams of the biopsy samples.

Keywords: Ground Water Arsenic Contamination, Flow Infection Hydride Generation Atomic Absorption Spectrometry, Arsenic in Water, Hair, Nails, Urine, Skin-Scales and Liver Tissues, Atomic-Absorption Spectrometry, Microwave-Oven Digestion, Blackfoot Disease, Metabolites, Products, Platform, Cancer

Jun, X., Lima, J.L.F.C. and Montenegro, M.C.B.S.M. (1995), Fast determination of sulfate by ion chromatography based on a permanently coated column. *Analyst*, **120** (10), 2469-2473.

Full Text: [1995\Analyst120, 2469.pdf](1995/Analyst120,%202469.pdf)

Abstract: A method based on a permanently coated C-18 Column for the fast determination (<2 min) of sulfate at the picogram level using indirect UV (205 nm) detection is described. Potassium hexacyanoferrate(III) and 1,12-diaminododecane were used as eluent and coating reagent, respectively. Over a period of 6 d the day-to-day reproducibility, expressed as the relative standard deviation for a 1.0 mg l-1 sulfate standard, is ±3.2% for the peak area and ±1.7% for the retention time, Determinations; of synthetic samples incorporating some inorganic ions and some organic anions showed that sufficient resolution in the presence of excess amounts of common ions was achieved. The proposed method was applied to water analysis. The analytical results of 27 different water samples including tap, well, surface, waste and-mineral water were in good agreement with those obtained by the turbidimetric method. The paired Student’s t-test showed that there was no statistical difference in the results.

Keywords: Ion Chromatography, Sulfate, Permanently Coated Column, Water Analysis, Ultraviolet-Absorption Detection, Inorganic Anions, Spectrophotometric Determination, Cetyltrimethylammonium, Behavior, Nitrite, Nitrate, Samples, Waters, Serum

Pasquini, C. and Cunha, I.B.S. (1995), Automated gravimetric management of solutions. Part 2. Automated gravimetric approach to direct potentiometry and kappa number determination. *Analyst*, **120** (11), 2763-2767.

Full Text: [1995\Analyst120, 2763.pdf](1995/Analyst120,%202763.pdf)

Abstract: The high-performance microcomputer controlled gravimetric-burette described in Part 1 has been employed to automate some routine analytical procedures, A direct potentiometric determination of fluoride ions in drinking water was developed to include an automatic calibration step, matrix adjustment and sample determination. Also the complex and cumbersome titrimetric procedure far determination of the kappa number (lignin content) in paper pulp, has been automated by using the gravimetric unit and biamperometry. In this last instance, the, automatic standardization of the solutions employed in the determination and the complete automation of the recommended kappa number determination procedure, allows a significant reduction in the amount of reagent consumed. The gravimetric approach to these procedures reveals that the same performance is achieved in terms of precision and accuracy when compared with classic volumetry while the cost associated with the automation decreases owing to the use of the same unit to attain automatic management of up to three different solutions.

Keywords: Automated Gravimetric Buret, Fluoride Determination in Drinking Water, Kappa Number of Paper Pulp, Automation of Biamperometric Titrations, Direct Potentiometry, Electrode, Fluoride

? Cuculić, V. and Branica, M. (1996), Adsorption of trace metals from sea-water onto solid surfaces: Analysis by anodic stripping voltammetry. *Analyst*, **121** (8), 1127-1131.

Full Text: [1996\Analyst121, 1127.pdf](1996/Analyst121,%201127.pdf)

Abstract: The rates and equilibria of the adsorption of dissolved Cd-II, Pb-II and Cu-II (at concentration levels of 2×10-8 and 8×10-8 mol l-1) from sea-water and from a 0.55 mol l-1 NaCl model solution onto electrochemical glass and quartz cells and Nalgene [fluorinated ethylene-poly(propylene)] sample bottles with and without added glass beads at pH 6.2 and 8.1 were measured by differential-pulse anodic stripping voltammetry, Lead(II) shows higher adsorption than Cu-II, whereas no adsorption of Cd-II is observed, Nalgene is the most suitable material for samplers and storage bottles, whereas quartz is the best material for the electroanalytical vessels, The maximum surface covering concentrations of Pb-II, (Gamma(infinity)) (from sea-water at pH 8.1) on the surfaces of a quartz cell, a glass cell, a Nalgene bottle and glass beads were found to be 2.0×10-11, 3.1×19-11, 2.0×10-12 and 2.6×10-11 mol cm-2, respectively. The maximum Pb capacities of the glass and quartz cells with the electrode assembly were calculated to be 2.3×10-9 and 1.5×10-9 mol, respectively, A procedure is proposed for the measurement of the trace metal capacity of the cell and the electrode assembly used in the experiments, for the determination of the metal concentration in natural samples.

Keywords: Adsorption, Isotherm, Cadmium(II), Lead(II), Copper(II), Sea-Water, Glass, Quartz, Fluorinated Ethylene-Poly(Propylene), Copper Complexation, Seawater, Estuarine, Cadmium

? Arpadjan, S., Vuchkova, L. and Kostadinova, E. (1997), Sorption of arsenic, bismuth, mercury, antimony, selenium and tin on dithiocarbamate loaded polyurethane foam as a preconcentration method for their determination in water samples by simultaneous inductively coupled plasma atomic emission spectrometry and electrothermal atomic absorption spectrometry. *Analyst*, **122** (3), 243-246.

Full Text: [1997\Analyst122, 243.pdf](1997/Analyst122,%20243.pdf)

Abstract: Column solid-phase extraction using dithiocarbamate loaded polyurethane foam was applied to the preconcentration of trace amounts of As, Bi, Hg, Sb, Se and Sn from water samples prior to their measurement by simultaneous ICP-AES and ETAAS, The sorption recoveries of all the analytes were higher than 97% for 150 ml water sample solutions passed through the column with pH approximate to 4.5 and sodium chloride concentration up to 3%. For As, Bi, Hg, Sb and Se, quantitative solid-phase extraction can be achieved over a wide pH range, from 0.5 to pH 5. The combination of the proposed preconcentration method with subsequent simultaneous analyte determination in the methanol eluates by ICP-AES permits the detection of 3 mu g l-1 As and Se, 8 mu g l-1 Bi, 0.12 mu g l-1 Hg, 2 mu g l-1 Sb and 6 mu g l-1 Sn in water samples. ETAAS measurement after dissolution of the sorbed analytes in isobutyl methyl ketone allows the detection of 0.06 mu g l-1 As and Sb, 0.1 mu g l-1 Bi and Sn, 0.08 mu g l-1 Se and 0.3 mu g l-1 Hg.

Keywords: Column Solid-Phase Extraction, Trace Element Preconcentration Water Samples, Inductively Coupled Plasma Atomic Emission Spectrometry, Electrothermal Atomic Absorption Spectrometry, Solid-Phase Extraction, Natural-Waters, Trace-Metals, Silica-Gel, Separation, Elements, Copper, Acid

Andersen, I., Berge, S.R. and Resmann, F. (1998), Speciation of airborne dust from a nickel refinery roasting operation. *Analyst*, **123** (4), 687-689.

Full Text: [A\Analyst123, 687.pdf](A/Analyst123,%20687.pdf)

Abstract: Earlier work-related lung and nasal cancer studies included estimates of exposures to different nickel species in the refinery. Based on the metallurgy, only insoluble nickel was believed to be present around the roasters but mixed exposure was assumed in most areas, including the tankhouse. Occasional leaching tests of samples from the roaster area have indicated the presence of soluble nickel. This study reports on five parallel sets of dust samples collected from different floors with standard equipment and treated as follows. Two sets were leached with an ammonium citrate buffer at pH 4.4. Undissolved material was treated with HClO4/HNO3, evaporated to dryness and dissolved in HCl, Ni, Cu, Co, Fe, Se, and As were determined in both fractions. Water soluble Ni was found in all samples, ranging from 5-35%. Sulfate in the solutions correlated nearly stoichiometrically to the total metal content. The three remaining sets were investigated by, respectively, differential leaching, X-ray diffraction and scanning electron microscopy. The percentage of soluble nickel found by differential leaching corresponded well with those obtained by the simplified procedure. X-ray diffraction analysis showed the presence of NiSO4.6H2O as well as oxides of Ni and Cu. This study indicates mixed exposures also in the roaster area. It also clearly indicates that basing exposure on the metallurgy alone can lead to serious misjudgements. The impact of this new information on the interpretation of cancer incidence at this refinery must await the analysis in an ongoing case-reference study.

Adams, F.C., Heisterkamp, M., Candelone, J.P., Laturnus, F., van de Velde, K. and Boutron, C.F. (1998), Speciation of organometal and organohalogen compounds in relation to global environmental pollution. *Analyst*, **123** (5), 767-772.

Full Text: [A\Analyst123, 767.pdf](A/Analyst123,%20767.pdf)

Abstract: Speciation of the elements emitted into the atmosphere plays an important role in their long range transport over the globe and their eventual pollution of remote environments. This paper describes recent results of our laboratory in: (1) organolead determinations in archives of snow and ice in Greenland and the Mont Blanc region in Western Europe. Speciation analysis together with the determination of total inorganic lead gives a clear indication on the extent of global pollution when compounds are transported over long distances in the atmosphere; and (2) determinations of volatile halocarbons in macroalgae whose transport in the stratosphere could interfere with the ozone destruction process. It is shown that the analytical methodology for the determination of a number of species is now well enough developed to allow ultra-sensitive and reliable measurements in samples collected in the remote environment and to derive interesting conclusions on long range transport processes.

Keywords: Organolead Compounds, Volatile Organohalogen Compounds, Speciation, Polar Snow, Macroalgae, Antarctic, Environmental Pollution, Halogenated Organic-Compounds, Aerosol Sampling Program, King-George-Island, Greenland Snow, Ascophyllum-Nodosum, Ozone Depletion, Methyl-Bromide, Potter Cove, Dye-3 Gas, Macroalgae

Benramdane, L., Accominotti, M. and Vallon, J.J. (1998), Validated determination of total arsenic species of toxicological interest (arsenite, arsenate and their metabolites) by atomic absorption spectrometry after separation from dietary arsenic by liquid extraction: Toxicological applications. *Analyst*, **123** (8), 1711-1715.

Full Text: [A\Analyst123, 1711.pdf](A/Analyst123,%201711.pdf)

Abstract: A validated method for the selective extraction of total As species of toxicological interest (arsenite, arsenate and mono-and dimethylated arsenic species) from urine, followed by atomic absorption spectrometric determination, is described. The mechanisms involved in extraction were studied and the extraction method was optimized. The urine sample was acidified with concentrated HCl and KI and sodium hypophosphite were added. Under these conditions, As species were reduced to their corresponding iodide arsines, extracted with toluene and back-extracted with 1 mmol l-1 NaOH solution. Only inorganic arsenic and its metabolites in humans (monomethylarsonic and dimethylarsinic acid) mere extracted. Arsenobetaine of dietary origin was not extracted. This method can detect if any As increase in urine originates from inorganic As intoxication or only from dietary non-toxic As species such as arsenobetaine.

Keywords: Inorganic Arsenic, Inorganic Arsenic Metabolites, Arsenobetaine, Arsenic Reduction, Arsenic Extraction, Atomic Absorption Spectrometry, Urine, Plasma-Mass-Spectrometry, Occupational Exposure, Speciation, Chromatography, Urine, Cancer, Water

# Title: Analytica Chimica Acta

Full Journal Title: [Analytica Chimica Acta](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=5216&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=46ce481bf3a6d69e9ef8c986b0c147ea); [Analytica Chimica Acta](http://sciencejournals.info/Analytica_Chimica_Acta.html)

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Pollard, F.H. and Hardy, C.J. (1957), The analysis of halogenated hydrocarbons by vapour phase chromatography. *Analytica Chimica Acta*, **16**, 135-143.

Full Text: [A\Ana Chi Act16, 135.pdf](A/Ana%20Chi%20Act16,%20135.pdf)

Abstract: The separation of a range of halogenated hydrocarbons by gas-liquid partition chromatography with various stationary phases is described. The data are presented as plots of the logarithm of the corrected retention volume per gram of stationary phase against the inverse of the column temperature, and can be used for the identification of these substances. Heats of solution in the liquid phase are calculated and compared with the latent heats of vaporization.

The selection of operating conditions to separate and quantitatively analyse mixtures of liquid halogenated hydrocarbons is described. Factors affecting the accuracy of analysis using an internal standard are discussed. A comparison is made of the accuracy and reproducibility of the results obtained by three methods of calibration.

Delahay, P. and Trachtenberg, I. (1958), Adsorption kinetics and electrode processes. *Analytica Chimica Acta*, **18** (1-2), 69-71.

Full Text: [A\Ana Chi Act18, 69.pdf](A/Ana%20Chi%20Act18,%2069.pdf)

Abstract: This investigation has been published elsewherel, and consequently only a summary will be given here for reference in the discussion section.

Mantoura, R.F.C. and Rilet, J.P. (1975), The use of gel filtration in the study of metal binding by humic acids and related compounds. *Analytica Chimica Acta*, **78** (1), 193-200.

Full Text: [A\Ana Chi Act78, 193.pdf](A/Ana%20Chi%20Act78,%20193.pdf)

Abstract: A gel filtration technique is described for the study of the complexation of dissolved metals by humic and fulvic acids. Measurements can be made under realistic conditions of pH and free metal ion concentrations, both of which can be maintained by the use of TRIS as a buffer. The procedure permits the determination not only of the overall stability constant, but of the binding stoichiometries and the intrinsic stability constants associated with the various types of metal binding sites. The procedure has been applied to the investigation of the interaction of fresh-water fulvic acids with Cu, Zn and Ni, and has provided evidence for the existence of two different types of binding sites in the fulvic acid molecule.

Bilinski, H., Huston, R. and Stumm, W. (1976), Determination of the stability constants of some hydroxo and carbonato complexes of Pb(II), Cu(II), Cd(II) and Zn(II) in dilute solutions by anodic stripping voltammetry and differential pulse polarography. *Analytica Chimica Acta*, **84** (1), 157-164.

Full Text: [A\Ana Chi Act84, 157.pdf](A/Ana%20Chi%20Act84,%20157.pdf)

Abstract: Anodic stripping voltammetry and differential pulse polarography are used to study complex formation between Cu(II), Pb(II), Zn(II) or Cd(II) and hydroxide or carbonate ions under concentration conditions which approximate those in natural waters, i.e. [Me]t < 10-7 M. Lead(II) and copper(II) form similarly stable carbonate complexes, which suggests that PbCO3.aq and CuCO3.aq are the preponderant lead and copper species in natural waters. Carbonate complexes of zinc(II) and cadmium(II) are less stable; hence these metals are present in natural waters ––depending on solution variables –– as aquo, hydroxo or chloro (sea water) complexes.

? Ramakrishna, T.V., Aravamudan, G. and Vijayakumar, M. (1976), Spectrophotometric determination of mercury(II) as the ternary complex with Rhodamine 6G and iodide. *Analytica Chimica Acta*, **84** (2), 369-375.

Full Text: [1960-80\Ana Chi Act84, 369.pdf](1960-80/Ana%20Chi%20Act84,%20369.pdf)

Abstract: The formation of a pink-coloured product when rhodamine 6G is treated with tetraiodomercurate(II) is used to determine mercury (5–25 μg) in a final volume of 25 ml. The reaction occurs immediately over the pH range 1–7 and, when the system is stabilized with gelatin, the absorbance remains unchanged at 575 nm for at least 24 h. The few interfering ions can be masked by the addition of appropriate reagent solutions. The method is simple and reliable and provides a molar absorptivity of 7.0·104 l mole-1 cm-1.

Kouimtzis, T.A., Sofoniou, M.C. and Papadoyannis, I.N. (1981), Determination of selenium in water samples by molecular-emission cavity analysis after co-precipitation. *Analytica Chimica Acta*, **123**, 315-317.

Full Text: [A\Ana Chi Act123, 315.pdf](A/Ana%20Chi%20Act123,%20315.pdf)

Abstract: Selenium (0.2–5 ppb) is coprecipitated with hydrated iron(III) oxide, dissolved in acid, reprecipitated as the element and determined by molecular emission cavity analysis. For a 250 ml water sample, the detection limit is 0.2 ppb. For < 5 ppb selenium there is no need for coprecipitation.

Ružić, I. (1982), Theoretical aspects of the direct titration of natural waters and its information yield for trace metalspeciation. *Analytica Chimica Acta*, **140** (1), 99-113.

Full Text: [A\Ana Chi Act140, 99.pdf](A/Ana%20Chi%20Act140,%2099.pdf)

Abstract: A new method for interpretation of direct titration of natural waters with trace metals is described based on a graph of the ratio between the free and bound metal concentration vs. the free metal concentration. The application of this method, which is based on a 1: 1 complex formation model, is discussed with respect to trace metal speciation in natural waters. Procedures for interpretation of experimental results are proposed for those cases where two types of complexes with different conditional stability constants are formed, or where the metal is adsorbed on colloidal particles. The advantages of the proposed method in comparison with earlier methods are presented theoretically and illustrated with some experiments on copper(II) in seawater. The limitations of the method are also discussed.

? Hirata, S., Honda, K. and Kumamaru, T. (1990), Trace-metal enrichment by automated online column preconcentration for flow-injection atomic-absorption spectrometry. *Analytica Chimica Acta*, **221** (1), 65-76.

Full Text: [1990\Ana Chi Act221, 65.pdf](1990/Ana%20Chi%20Act221,%2065.pdf)

Abstract: An on-line column preconcentration technique for flow-injection atomic absorption spectrometry was developed. Diverse metal ions (Cd2+, Zn2+, Cu2+, Mn2+, Pb2+, Fe3+ and Cr3+) in solution were concentrated quantitatively by a microcolumn (7-mm×4-mm i.d.) packed with Muromac A-1, which is an iminodiacetate chelate resin, in a flow-injection system. From the pH dependence of the uptake of the ions, all the divalent metals examined were recovered quantitatively in the pH range 3–5 and the trivalent metals were recovered at a maximum pH of 1. Enrichment factors using 20-ml samples were in the range 90–180-fold for the seven elements and the sampling rate was 13 h−1. The 3σ detection limits were in the range 0.14–2.1 μg l−1 and the relative standard deviations for replicate measurements (*n*=3–4) were in the range 0.7–1.7%. The method was compared with flame and graphite furnace atomic absorption spectrometry. Application to the determination of cadmium and copper in several standard reference materials is described.

? Li, J.X., Liu, Y.M. and Lin, T.Z. (1990), Determination of lead by hydride generation atomic-absorption spectrometry. Part 1. A new medium for generating hydride. *Analytica Chimica Acta*, **231** (1), 151-155.

Full Text: [1990\Ana Chi Act231, 151.pdf](1990/Ana%20Chi%20Act231,%20151.pdf)

Abstract: A new medium, used to generate lead hydride, was optimized as 0.3% (w/v) oxalic acid-2% (w/v) ammonium cerium(III) nitrate-8% (w/v) potassium tetrahydroborate-1% (w/v) sodium hydroxide solution; 950°C is used for atomization. The characteristic concentration (0.0044 absorbance) obtained under these conditions was 0.04 ng ml−1. The application of this medium to soil and ferromagano-brass samples is illustrated.

Filella, M., Buffle, J. and Van Leeuwen, H.P. (1990), Effect of physicochemical heterogeneity of natural complexants. Part I. Voltammetry of labile metal fulvic complexes. *Analytica Chimica Acta*, **232**, 209-223.

Full Text: [A\Ana Chi Act232, 209.pdf](A/Ana%20Chi%20Act232,%20209.pdf)

Abstract: A theoretical study of the effect of the physico-chemical heterogeneity of complexants such as fulvic compounds on d.c. polarographic curves is described. These compounds have been strongly implicated in playing a decisive role in trace cation complexation in natural systems. Their main feature is their wide range of complexation energy, which stems from their intrinsic properties: polyfunctionality, polyelectrolytic character and conformational properties. The whole of these complexing properties may be represented by complexation distribution functions. It is shown that, in the formation of labile metal––fulvic complexes and in the absence of adsorption and kinetic effects, it is possible to obtain from a single voltammetric curve important parameters related to metal speciation, namely the average diffusion coefficient of the complexes and the parameters describing the equilibrium complexation distribution functions.

Notes: highly cited

? Horvat, M., Liang, L. and Bloom, N.S. (1993), Comparison of distillation with other current isolation methods for the determination of methyl mercury compounds in low level environmental samples. Part II. Water. *Analytica Chimica Acta*, **282** (1), 153-168.

Full Text: [1993\Ana Chi Act282, 153.pdf](1993/Ana%20Chi%20Act282,%20153.pdf)

Abstract: In the present paper two isolation procedures for the separation of methyl mercury compounds (MeHg) from natural water samples, followed by aqueous phase ethylation, precollection on the Carbotrap, isothermal gas chromatography and cold vapour atomic fluorescence (CV-AFS) detection were compared and evaluated. The first isolation technique is based on extraction of MeHg into methylene chloride and back extraction into water by solvent evaporation. The second is based on the distillation of MeHg compounds. A comparison of these two isolation procedures was performed on 110 water samples of various origin (oxic, anoxic fresh water and sea water) and containing a wide MeHg concentration range (from 0.01 to 25 ng l-1). A relatively good agreement of the results was obtained in the concentration range below 1 ng l-1 as Hg (r2 = 0.919, n = 61). In anoxic, sulphide rich and organic matter rich water samples that usually contain higher MeHg values, significantly higher values (approx. 30%) were obtained by distillation. This is partly due to sulphide interference during the ethylation step, as well as incomplete release of MeHg from bound sites. Distillation was found advantageous to solvent extraction. It gives consistent and high recoveries (80-95%) for various water samples, and achieves lower detection limits (0.006 ng l-1 for 50 ml water sample). It is also less laborious and without the use of organic solvent. Additionally, distillation provides the specific separation of MeHg and dimethylmercury, if present.

Keywords: Gas Chromatography, Atomic Fluorescence Spectrometry, Distillation, Methyl Mercury, Solvent Extraction, Waters, Plasma Mass-Spectrometry, Open Ocean Waters, Sub-Nanogram, Adsorbent Preconcentration, Gas-Chromatography, Natural-Waters, Liter Levels, Methylmercury, Lake

Lan, C.R. and Yang, M.H. (1994), Synthesis, properties and applications of silica-immobilized 8-quinolinol. Part 1. Characterization of silica-immobilized 8-quinolinol synthesized via a mannich reaction. *Analytica Chimica Acta*, **287** (1-2), 101-109.

Full Text: [A\Ana Chi Act287, 101.pdf](A/Ana%20Chi%20Act287,%20101.pdf)

Abstract: A one-step Mannich reaction has been developed for the immobilization of 8-quinolinol on aminopropylsilica gel that results in a product exhibiting a capacity of 466±20 µmol g-1 for copper(II) ions. Capacity measurements were made by copper(II) uptake and elemental analysis. Characterization of the silica bound ligands in this synthetic context including IR spectrometry, C-13 NMR spectrometry, acid-base properties and stabilities were presented. The effect of pH on the extraction of copper(II), nickel(II) and cadmium(II) for silica-immobilized 8-quinolinol was alson evaluated.

Keywords: Atomic Emission Spectrometry, Infrared Spectrometry, Nuclear Magnetic Resonance Spectrometry, Mannich Reaction, 8-Quinolinol, Silica-Immobilized 8-Quinolinol, 8-Hydroxyquinoline, Gel

Jezorek, J.R., Tang, J.W., Cook, W.L., Obie, R., Ji, D.J. and Rowe, J.M. (1994), Aspects of the synthesis, characterization and metal-ligand stoichiometry of aminopropyl, nitrobenzamide, and 8-quinolinol silica-gels. *Analytica Chimica Acta*, **290** (3), 303-315.

Full Text: [A\Ana Chi Act290, 303.pdf](A/Ana%20Chi%20Act290,%20303.pdf)

Abstract: Surface modification of several silica gels with a number of silanes was studied, as well as further reactions of the modified surfaces. Complete reaction of aminopropylsilane was easily achieved if surface silanols were in excess. Triethoxysilylpropyl-p-nitrobenzamide (TESPN) reacts with difficulty, and complete reactions occurred only with long reaction time (at least 12 h). The maximum coverage of 100-Angstrom pore silica gel by TESPN was found to be about 1.7 µmol/m2, considerably less than the 3-4 µmol/m2 of available silanol sites, probably due to steric effects of the large silane. Even at this maximum coverage, further reaction of the modified silica with trimethylsilyl capping groups occurred, with additional coverage of about 1.0 µmol/m2. The maximum amount of silylpropylamido-p-phenylazo-8-quinolinol that could be bound to silica gel was found to be about 1.0 µmol/m2, again probably limited by steric effects of the large 8-quinolinol (oxine) moiety. Virtually complete conversion of parent nitrobenzamide silica gel (NBSG) to 8-quinolinol silica gel (QSG) could be achieved if NBSG coverage was less than about 0.7 µmol/m(2). QSG materials were found to have a 2 oxine to 1 copper(II) stoichiometry, even with surface coverages as low as 0.16 µmol/m2

Keywords: Silica Gel, Surface Modification, Silanes, Liquid-Chromatographic Separation, Ray Photoelectron-Spectroscopy, Chemically Modified Electrodes, Bound Complexing Agents, Immobilized 8-Quinolinol, Chelation Chromatography, Stationary Phases, Pore-Size, 8-Hydroxyquinoline, Ethylenediamine

Machado, A.A.S.C., Dasilva, J.C.G.E. and Maia, J.A.C. (1994) Multiwavelength analysis of synchronous fluorescence-spectra of the complexes between a soil fulvic-acid and Cu(II). *Analytica Chimica Acta*, **292** (1-2), 121-132.

Full Text: [A\Ana Chi Act292, 121.pdf](A/Ana%20Chi%20Act292,%20121.pdf)

Abstract: The variations observed in the synchronous fluorescence spectra of a soil fulvic acid, collected in the north of Portugal, with pH (between 2 and 7) and with Cu(II) concentration (at pH 3, 4, 5 and 6 and total copper concentrations between 0.005 and 4 mM depending on the pH) were studied by SIMPLISMA, a self-modelling mixture analysis technique. Three components were deeected when varying the pH, corresponding to three acid-base equilibria with pK(a) values around 3.0, 5.0 and 6.0, and their individual spectra were obtained. Two components were detected when varying the Cu(II) concentration, corresponding to two different ligand sites, and their spectra and concentration profiles (based on the two detected pure variables) were obtained. The spectrum of one binding site is similar to the component associated with the acid-base equilibrium with pK(a) = 3.0 and that of the other binding site is similar to the sum of the spectra of the components associated with the other two acid-base equilibria. Using a 1: 1 stoichiometry for complex formation, complexation capacities (C-L) and stability constants (K) were calculated for the two binding sites at the four pH values. The calculated stability constants were log K-1 = 3.42(4), log K-2 = 3.05(5) at pH 3, log K-1 = 4.17(3), log K-2 = 3.71(1) at pH 4, log K-1 = 4.51(3), log K-2 = 3.95(2) at pH 5 and log K-1 = 4.57(3), log K-2 = 4.03(1) at pH 6.

Keywords: Fluorometry, Copper, Fulvic Acid, Soils, Self-Modeling Mixture Analysis, (Simplisma), Multiwavelength Spectroscopic Data, Modeling Mixture Analysis, Evolving Factor-Analysis, Ion-Selective Electrode, Equilibrium-Constants, Titrations, Binding

Fukushima, M., Tanaka, S., Hasebe, K., Taga, M. and Nakamura, H. (1995), Interpretation of the acid-base-equilibrium of humic-acid by a continuous pK distribution and electrostatic model. *Analytica Chimica Acta*, **302** (2-3), 365-373.

Full Text: [A\Ana Chi Act302, 365.pdf](A/Ana%20Chi%20Act302,%20365.pdf)

Abstract: Acid-base equilibria of a humic acid were characterized by considering ionic group heterogeneity and electrostatic effects. The continuous p*K* distribution model, in which acidic functional groups having two centers of distribution were assumed in the humic molecule, was adapted to the experimental titration data by non-linear least square regression analysis. Excellent curve-fitting was obtained, and two centers of p*K* distribution (μ1 and μ2) and the total amounts of functional groups (*C*A1 and *C*A2) were evaluated. It was suggested that there are strong and weak acidic groups in the humic molecule and that they continuously deprotonate according to their p*K* distribution. The μ values were evaluated in media of various ionic strength (*I* = 0.004-1); μ1 (strong groups): 3.4-5.1, μ2 (weak groups): 6.0-7.9, and the ratio of*C*A1 to *C*A2 was ca. 5: 2. The electrostatic model including the Debye-Hückel theory was adapted to evaluate the intrinsic dissociation constants, p*K*i, int. From the relationship between the μ values and *I*, the intrinsic p*K*i values of two centers of distributions, μint, could be evaluated; μ1, int: 3.03, μ2, int: 5.12. The intrinsic p*K* distribution and the species distribution curves were calculated under electrostatic-free conditions. Investigation of Fourier transform infrared spectra and the species distribution curves suggested that the two different types of carboxylic groups would contribute to the p*K* distribution of each functional group.

Keywords: Acid-base equilibria, Humic acid

Glaus, M.A., Hummel, W. and Vanloon, L.R. (1995), Equilibrium dialysis ligand-exchange: Adaptation of the method for determination of conditional stability-constants of radionuclide fulvic-acid complexes. *Analytica Chimica Acta*, **303** (2-3), 321-331.

Full Text: [A\Ana Chi Act303, 321.pdf](A/Ana%20Chi%20Act303,%20321.pdf)

Abstract: The equilibrium dialysis-ligand exchange technique (EDLE) has been adapted to measure conditional stability constants for the complexation of metal ions with fulvic acid. Since fulvic acid permeates across the membrane during the experiment, the quantities involved have to be determined analytically and taken into account when calculating the conditional stability constants. It is shown here that the larger diffusion rates of fulvic acid compared to those of humic acid do not lead to enhanced errors in the results. Conditional stability constants (*cKFA*) of Laurentian Soil fulvic acid are determined at various pH values and ionic strengths for the binding of Co2+ and UO2+2. Over the whole pH range, at ionic strength of 0.2 M, log(*cKFA*) averages half a log unit lower than at ionic strength of 0.02 M. A comparison with the corresponding binding constants measured for Aldrich humic acid (*cKHA*) by the conventional EDLE technique shows that log(*cKFA*) values differ by not more than one order of magnitude from log(*cKHA*) values.

Keywords: Equilibrium Dialysis, Fulvic Acid, Stability Constants

Porter, N., Hart, B.T., Morrison, R. and Hamilton, I.C. (1995), Determination of metal-ion mixtures using pH gradient flow-injection analysis with fluorescence detection. *Analytica Chimica Acta*, **308** (1-3), 313-328.

Full Text: [A\Ana Chi Act308, 313.pdf](A/Ana%20Chi%20Act308,%20313.pdf)

Abstract: A pH gradient now-injection system has been combined with fluorescence detection to determine the concentrations of zinc, cadmium, lead, magnesium and aluminium in ternary and quaternary mixtures. A partial least squares algorithm was employed to analyse the fluorescence-time scans produced from mixtures of metal cations, and compared with a classical least squares algorithm. The performance of the partial least squares algorithm was better than the classical least squares approach particularly in more complex mixtures. The method was also used in the analysis of tap water for zinc, aluminium and magnesium and found to be comparable with the results obtained using name atomic absorption spectrometry.

Keywords: Flow Injection, Fluorometry, Metal Ion Mixtures, Micellar Media, Enhancement, Systems

Hong, U.S., Kwon, H.K., Nam, H., Cha, G.S., Kwon, K.H. and Paeng, K.J. (1995), Simultaneous determination of alkali and alkaline-earth metals by ion chromatography with neutral carrier-based ion-selective electrode detector. *Analytica Chimica Acta*, **315** (3), 303-310.

Full Text: [A\Ana Chi Act315, 303.pdf](A/Ana%20Chi%20Act315,%20303.pdf)

Abstract: Neutral carrier-based potentiometric detectors that can monitor both mono-and divalent cations have been developed for ion chromatography. The solvent polymeric membranes doped with a mixture of monesin methyl ester (MME; a monovalent cation-selective ionophore) and a divalent cation-selective ionophore (ETH 1117 or ETH 4030) have the combined properties of each single ionophore. These double ionophore-doped ISE membranes showed similar selectivities for ammonium, alkali and alkaline earth metal ions. The ion chromatograms of ten representative cations (Li+, Na+, NH4+, K+, Rb+, Cs+, Ca2+, Mg2+, Sr2+ and Ba2+) proved their practical utility. The MME/ETH 1117 electrode, which showed better detection limits for most cations tested here and a longer lifetime (16 days), was further utilized for determining alkali and alkaline earth metal cations in commercial mineral waters. The results were in good agreement with those determined by using inductively coupled plasma atomic emission spectrometry.

Keywords: Ion Chromatography, Ion-Selective Electrodes, Alkali and Alkaline Earth Metals, Potentiometric Detection, Liquid-Chromatography, Membrane Electrodes, Halides, Anions

Carpenter, N.G. and Pletcher, D. (1995), Amperometric method for the determination of nitrate in water. *Analytica Chimica Acta*, **317** (1-3), 287-293.

Full Text: [A\Ana Chi Act317, 287.pdf](A/Ana%20Chi%20Act317,%20287.pdf)

Abstract: An amperometric method for the determination of nitrate in water has been developed. A small addition of acid copper sulfate is made to the sample and a potential pulse sequence is used to measure the current for the reduction of nitrate at an in situ, freshly plated copper surface. The procedure works well for the nitrate concentration range 0.1-1 mM, important for water intended for human consumption; there appear to be no serious interferences, for example chloride ion at the maximum permitted level does not interfere.

Keywords: Amperometry, Nitrate, Environmental Analysis, Waters, Insitu Electrodeposited Copper, Voltammetric Determination, Electrochemical Reduction, Disk Electrode, Carbon-Dioxide, Nitrite, Cadmium, Acid, Ions

Nagy, G., Tóth, K., Fehér, Z. and Kunovits, J. (1996), Novel potentiometric monitoring combined with coulometric reagent generation. *Analytica Chimica Acta*, **319** (1-2), 49-58.

Full Text: [A\Ana Chi Act319, 49.pdf](A/Ana%20Chi%20Act319,%2049.pdf)

Abstract: A potentiometric monitor incorporating a flow-through analysis channel has been developed based on the standard addition or subtraction principle. Programmed addition of standard or reagent was carried out at a given point of the flow-through system by current-programmed coulometry. A computer was used for data acquisition, for electric noise rejection, for signal recognition and for calculating the analytical results. The characteristics of the monitor system have been investigated under conditions optimised for the chloride determination, and the performance of it was checked by monitoring the chloride concentration in tap water.

Keywords: Potentiometry, Coulometry, Flow System, Selective Electrode Potentiometry

Hernández, O., Jiménez, F., Jiménez, A.I., Arias, J.J. and Havel, J. (1996), Multicomponent flow injection based analysis with diode array detection and partial least squares multivariate calibration evaluation. Rapid determination of Ca(II) and Mg(II) in waters and dialysis liquids. *Analytica Chimica Acta*, **320** (2-3), 177-183.

Full Text: [A\Ana Chi Act320, 177.pdf](A/Ana%20Chi%20Act320,%20177.pdf)

Abstract: Flow injection analysis (FIA) with multiwavelength scanning of the FIA peaks using a diode array detector (DAD) has been combined with a multivariate calibration approach applying the partial least squares (PLS) method for the data evaluation. In this way, various side effects like dilution of the reagent, high blank absorbance changes due to the pH gradient throughout the peak and/or the other interferences can be accounted for. Thus, even with a simple FIA manifold instrumentation the satisfactory results of multicomponent analysis are obtained. The method described has been checked on analysis of binary (Ca and Mg) and ternary (Ca, Mg and Cu) mixtures with pyridylazo resorcinol (PAR) as reagent and applied for rapid determination of calcium and magnesium in dialysis liquids and waters.

Keywords: Multicomponent Analysis, Flow Injection, Partial Least Squares Multivariate Calibration, Simultaneous Spectrophotometric Determination, Resolution, Magnesium, Calcium

Powell, H.K.J. and Fenton, E. (1996), Size fractionation of humic substances: Effect on protonation and metal binding properties. *Analytica Chimica Acta*, **334** (1-2), 27-38.

Full Text: [A\Ana Chi Act334, 27.pdf](A/Ana%20Chi%20Act334,%2027.pdf)

Abstract: Humic substances have been extracted from a standard reference peat at pH 2.0, 6.0-6.5, 9.0 and 12.0 using 0.01 M or 0.001 M Na4P2O7. Humic acids extracted at pH 6.0, 9.0 and 12.0 showed a progressive increase in mean molecular size, as determined by gel permeation chromatography. With increasing molecular size there was a significant decrease in titratable acidity for humic acids (ca. 5.2-4.3 meq -COOH g-1). However, little variation in Cu(II) binding strength or complexation capacity (gHS)-1 was observed between humic acids (or between fulvic acids) extracted at different pH values. Likewise, there was little variation in the protonation constants when calculated on the basis of a discrete binding site model. The major differences were between fulvic and humic fractions. Fulvic acids had (i) a lower Cu(II) binding strength, (II) a lower complexation capacity per mol titratable COOH acidity (when batch extracted at pH >6), (III) a higher titratable acidity (ca. 7.2 (vs. 4.7)meq -COOH g-1), (IV) a lower proportion of polyprotic (n>4) binding sites and (v) a larger fraction of strongly dissociating -COOH groups (42-58% with pK(a) ca. 2).

Keywords: Humic and Fulvic Substances, Gel Permeation Chromatography, Size Fractionation, Metal Binding, Carboxyl-Group Structures, Fulvic-Acid, Organic-Matter, Suwannee River, Extraction, Georgia

Minamisawa, H., Iwanami, H., Arai, N. and Okutani, T. (1999), Adsorption behavior of cobalt(II) on chitosan and its determination by tungsten metal furnace atomic absorption spectrometry. *Analytica Chimica Acta*, **378** (1-3), 279-285.

Full Text: [A\Ana Chi Act378, 279.pdf](A/Ana%20Chi%20Act378,%20279.pdf)

Abstract: Chitosan is derived from the deacetylation of chitin, which can adsorb metal ions and can dissolve in some organic acids. These properties are applied to the preconcentration of cobalt(II) in water samples and their determination by tungsten metal furnace atomic absorption spectrometry. Cobalt(II) is quantitatively adsorbed onto chitosan at a pH range 5.0-10.0 from sodium chloride solutions and their adsorption isotherms were fitted by the Freundlich equation. The chitosan with adsorbed cobalt(II) was separated from the sample solution by a membrane filter, and then dissolved in 2.0 cm) of 0.5 moldm-3 acetic acid solution. The aliquot of this resulting solution was introduced directly into a tungsten metal furnace and the absorbance of cobalt was measured by atomic absorption spectrometry. The detection Limit for cobalt(II) was 0.005 µg/100 cm by the proposed procedure (S/N greater than or equal to 3. The relative standard deviations (n = 5) were 3.8% for 0.10 µg Co(II)/100 cm3, and 4.3% for 0.05 µg Co(II)/100 cm3. This method was applied to the determination of trace amounts of cobalt(II) in the environmental water samples.

Keywords: Tungsten Metal Furnace Atomic Absorption Spectrometry, Chitosan, Cobalt(II), Preconcentration, Spectrophotometric Determination, Activated Carbon, Trace Amounts, Preconcentration, Chitin, Water, Complex, Collection, Separation, Recovery

? Zhou, J., He, X.W. and Li, Y.J. (1999), Binding study on 5,5-diphenylhydantoin imprinted polymer constructed by utilizing an amide functional group. *Analytica Chimica Acta*, **394** (2-3), 353-359.

Full Text: [1999\Ana Chi Act394, 353.pdf](1999/Ana%20Chi%20Act394,%20353.pdf)

Abstract: The molecular imprinting technique was applied for the preparation of a polymer selective for an acidic drug, 5,5-diphenylhydantoin in a polar solvent using acrylamide as the hydrogen-bonding functional monomer, The binding characteristics of the imprinted polymer were evaluated by batch methods. Scatchard analysis showed that two classes of binding sites were formed in the imprinted polymer. Their dissociation constants were estimated to be 9.05 μmol/l and 1.87 mmol/l, respectively, by utilizing the model of multiple independent classes of binding sites. These results were more reasonable than those obtained by the Scatchard equation. Factors that influenced rebinding of the imprinted polymer including pH, template/monomer ratio and functional monomers were explored. By contrast, when methacrylic acid was used as functional monomer, the molecular imprinted polymers made in tetrahydrofuran exhibited only very weak binding capacity for the template molecule. Finally, the substrate selectivity of imprinted polymer was investigated. (C) 1999 Elsevier Science B.V. All rights reserved.

Keywords: Molecular Imprinting, Substrate Selectivity, 5,5-Diphenylhydantoin, Binding Sites, Dissociation Constants, Peptide Receptor Mimics, Amino-Acids, Recognition, Atrazine, Assay, Resolution

Yu, M.Q., Tian, W., Sun, D.W., Shen, W.B., Wang, G.P. and Xu, N. (2001), Systematic studies on adsorption of 11 trace heavy metals on thiol cotton fiber. *Analytica Chimica Acta*, **428** (2), 209-218.

Full Text: [A\Ana Chi Act428, 209.pdf](A/Ana%20Chi%20Act428,%20209.pdf)

Abstract: The modified thiol cotton fiber (TCF) can quantitatively adsorb, at least the ions of I I trace heavy metals in solution with adsorption order: Bi(III) approximate to Sn(II) > Ag(I) > Cu(II) > In(III) > Pb(II) > Cd(II) > Zn(II) > Co(II) approximate to Ni(II) > Tl(I) and a saturation adsorption quantity of ca. 0.3 mmol g-1. For a column with 0.1 g of TCF and a flow rate of 10-20 ml min-1, it can quantitatively adsorb the trace heavy metals and quantitative desorption, of the elements can be realized by elution with 2-3 ml of 0.01-2.0 mol l-1 HCl. TCF eluted by dilute HCl can be reused many times and the adsorption rate is not decreased. The coexistence of metals, the complexing reagents and the organic compounds in the solution does not interfere with the quantitative adsorption of most of the trace metals on TCF; some oxidizing reagents obviously interfere with the preconcentration of a sample with a big volume of water, which can be effectively pre-eliminated by adding a suitable amount of some reducing agent. The experimental results show that TCF possesses excellent adsorption and desorption properties and is of great value to the application of the enrichment, the separation and the analyses of the trace elements. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Thiol Cotton Fiber, Trace Heavy Metal, Enrichment, Adsorption, Desorption, Atomic-Absorption Spectrometry, Preconcentration, Chromatography, Enrichment, Separation, Antimony, Gold

? Castro, B., Whitcombe, M.J., Vulfson, E.N., Vazquez-Duhalt, R. and Bárzana, E. (2001), Molecular imprinting for the selective adsorption of organosulphur compounds present in fuels. *Analytica Chimica Acta*, **435** (1), 83-90.

Full Text: [2001\Ana Chi Act435, 83.pdf](2001/Ana%20Chi%20Act435,%2083.pdf)

Abstract: A novel approach to the potential desulphurisation of fuels such as diesel is proposed. It relies on the creation of recognition sites complementary to sulphur-containing compounds in highly cross-linked polymeric matrices using the molecular imprinting technique. Dibenzothiophene sulphone (DBTS) was used as template for the preparation of molecularly imprinted polymers (MIPs). Four different polymers were synthesised using 5-octyloxy-1,3-bis(4-ethenylphenyl)-benzenedicarboxamide or methacrylic acid and divinylbenzenes or ethylene glycol dimethacrylate as functional monomers and cross-linkers, respectively. Three polymers showed better binding of DBTS than non-imprinted controls, and were also superior in adsorption of organosulphur compounds such as dibenzothiophene (DBT) and benzothiophene (BT) present in a model mixture. A maximum adsorption of 66 mg DBT per gram of polymer was observed at a polymer load of 10 gl-1 and an initial DBT concentration of 3.69 gl-1. The polymers also showed selectivity for fluorene. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Desulphurisation, Dibenzothiophene, Organosulphur Compounds, Molecular Imprinting, Molecularly Imprinted Polymers, Solid-Phase Extraction, Solid-Phase Extraction, Mediated Lithography, Polymer Surfaces, Recognition, Separation, Oxidation, Proteins, Biodesulfurization, Antibodies, Technology

Town, R.M. and Filella, M. (2001), Crucial role of the detection window in metal ion speciation analysis in aquatic systems: The interplay of thermodynamic and kinetic factors as exemplified by nickel and cobalt. *Analytica Chimica Acta*, **466** (2), 285-293.

Full Text: [A\Ana Chi Act466, 285.pdf](A/Ana%20Chi%20Act466,%20285.pdf)

Abstract: The complexation parameters (complexation capacity, *C*c, and conditional stability constant, *K*) for binding of Ni(II) and Co(II) by natural organic matter (NOM) are shown to be dependent on the analytical detection window used for their determination. This observation is a consequence of ligand heterogeneity. Complexation parameters for isolated NOM components (humic substances and biota) are typically determined at low detection windows (weak, labile binding sites detected), whereas whole waters are generally studied at much higher detection windows (stronger, less labile sites detected). Comparison and interpretation of metal ion binding across systems and across metals is only valid if all the data were obtained within the same detection window. © 2002 Elsevier Science B.V. All rights reserved.

Keywords: Analytical Detection Window, Cobalt, Humic Substances, Natural Organic Matter, Natural Waters, Nickel, Speciation

Notes: highly cited

? Cai, H., Wang, Y.Q., He, P.G. and Fang, Y.H. (2002), Electrochemical detection of DNA hybridization based on silver-enhanced gold nanoparticle label. *Analytica Chimica Acta*, **469** (2), 165-172.

Full Text: [2002\Ana Chi Act469, 165.pdf](2002/Ana%20Chi%20Act469,%20165.pdf)

Abstract: An electrochemical detection method for analyzing sequence-specific DNA using gold nanoparticle DNA probes and subsequent signal amplification step by silver enhancement is described. The assay relies on the electrostatic adsorption of target oligonucleotides onto the sensing surface of the glassy carbon electrode (GCE) and its hybridization to the gold nanoparticle-labeled oligonucleotides DNA probe. After silver deposition onto gold nanoparticles, binding events between probe and target were monitored by the differential pulse voltammetry (DPV) signal of the large number of silver atoms anchored on the hybrids at the electrode surface. The signal intensity difference permits to distinguish between the match of two perfectly matched DNA strands and the near-perfect match where just one base pair was wrong. Coupled with this ‘nanoparticle-promoted’ reduction of silver signal amplification method, the sensitivity of this electrochemical DNA biosensor has been increased by approximately two orders of magnitude and a detection limit of 50 pM of complementary oligonucleotides was obtained. (C) 2002 Elsevier Science B.V. All rights reserved.

Keywords: Gold Nanoparticle, DNA Hybridization, Mutation Detection, Electrochemical Biosensor, Sequence-Specific DNA, Chitosan-Modified Electrode, Human Cytomegalovirus DNA, Peptide Nucleic-Acid, Probes, Biosensor, Damage, Oligonucleotide, Films

El Shahawi, M.S. and Nassif, H.A. (2003), Kinetics and retention characteristics of some nitrophenols onto polyurethane foams. *Analytica Chimica Acta*, **487** (2), 249-259.

Full Text: [A\Ana Chi Act487, 249.pdf](A/Ana%20Chi%20Act487,%20249.pdf)

Abstract: The kinetics of sorption of the nitrophenols by the unloaded polyurethane foams (PUFs) were found fast, reached equilibrium in few minutes and followed a first-order rate equation with an overall rate constant kin the range (0.16-0.21)±0.01 min-1 The retention of the tested nitrophenols by the unloaded foams is consistent with the “solvent extraction” mechanism. However, the sorption also followed Langmuir, Freundlich and Dubinin- Radushkevich (D-R) isotherms. The mean free sorption energy of the nitrophenols onto the PUF was found equal to 7.5±0.4 kJ, mol, which reflects physical sorption. Thus, a dual-mode involves both absorption related to solvent extraction and an added component for surface adsorption seems a more likely sorption mechanism model. While a dual-mode sorption model explains the observed retention behavior, the data suggest that, solvent extraction plays a much larger role than the added component for surface adsorption. The sorption and recovery percentages of the nitrophenols from fresh, natural and industrial wastewater by the proposed unloaded foam columns were quantitatively achieved. The height equivalent to theoretical plates (HETP), N, the breakthrough capacity and the critical capacity for the unloaded foam columns were found in the range of (0.8-1.1)±0.6 mm, (94-132)±3, 3.2-4.02 and 1.5-2.67 mg, g, respectively. The method was successfully applied for the retention and recovery of the tested nitrophenols spiked to fresh and industrial wastewaters. (C) 2003 Elsevier Science B.V. All rights reserved.

Keywords: Absorption, Adsorption, Behavior, Breakthrough, Capacity, Equilibrium, Extraction, Freundlich, Insecticides, Isotherms, Kinetics, Kinetics and Retention Characteristics, Langmuir, Mechanism, Membrane, Model, Nitrophenols, Phenols, Pollutants, Polyurethane, Polyurethane Foams, Preconcentration, PUFS, Rate Constant, Recovery, Retention, Rights, Separation, Sorption, Sorption Mechanism, Wastewater, Water

? Khan, A.A. and Alam, M.M. (2004), New and novel organic-inorganic type crystalline ‘polypyrrolel/polyantimonic acid’ composite system: Preparation, characterization and analytical applications as a cation-exchange material and Hg(II) ion-selective membrane electrode. *Analytica Chimica Acta*, **504** (2), 253-264.

Full Text: [2004\Ana Chi Act504, 253.pdf](2004/Ana%20Chi%20Act504,%20253.pdf)

Abstract: A new phase of ‘organic-inorganic’ composite system, polypyrrole polyantimonic acid, prepared by mixing the inorganic precipitate of hydrated antimony oxide with organic conducting polymer i.e., polypyrrole, providing a novel granular form hybrid cation-exchanger suitable for column operation with better chemical and thermal stability, good ion-exchange capacity, reproducibility and selectivity for heavy metals. The physicochemical properties of this material were studied using elemental analyses, AAS, SEM, XRD, FTIR and simultaneous TGA-DTA studies. Ion-exchange capacity, pH-titrations, elution and distribution behavior were also carried out to characterize the material. Distribution studies revealed the cation-exchange material to be highly selective for Hg(II) and its selectivity was performed by achieving some important binary separations like Hg2+-Zn2+, Hg2+-Ni2+, Hg2+-Cu2+, Hg2+-Fe3+, Hg2+-Cd2+, Hg2+-Mg2+ etc. on its column. Using this electroactive composite material, a new heterogeneous precipitate based selective ion-sensitive membrane electrode was fabricated for the determination of Hg(II) ions in solutions. The membrane electrode is mechanically stable, with a quick response time, and can be operated within a wide pH range. The selectivity coefficients for different cations determined by mixed solution method were found to be less than unity The electrode was also found to be satisfactory in electrometric titrations. (C) 2003 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Antimonate, Behavior, Capacity, Cation Exchange, Characterization, Distribution, Ftir, Heavy Metals, Hg(II), Hg(II) Ion-Selective Membrane Electrode, Hybrid Cation-Exchanger, Ion Exchange, Lead(II), Organic-Inorganic Composite Material, pH, Phosphate, Polypyrrole Polyantimonic Acid, SEM, System, Thermal Stability, XRD, Zirconium

Thomaidis, N.S., Georgiou, C.A. and Calokerinos, A.C. (2004), Analytical chemistry in Balkan and East Mediterranean countries during 1994–2001. *Analytica Chimica Acta*, **505** (1), 3-8.

Full Text: [2004\Ana Chi Act505, 3.pdf](2004/Ana%20Chi%20Act505,%203.pdf)

Abstract: Research activity in the Balkan and East Mediterranean countries was evaluated on the basis of publications appearing in Analytical Abstracts (AA) during the cumulative 8-year period of 1994–2001. This was accomplished by assessing the scientific publication productivity in analytical chemistry as the number of publications from each country and the number of publications per population unit. To assess the impact in the scientific community, the mean impact factor for each country was calculated. The publication productivity trend was recorded for the 7-year period 1994–2000. Moreover, the preference to publish in specific journals per country was appraised. According to the total number of publications, Egypt (765 publications) and Greece (717 publications) are the most productive countries, while Slovenia shows the highest number of publications per million of population (140). Scientists from Israel published their work in the highest impact analytical journals with a mean impact factor of 2.02, followed by Slovenia (mean impact factor of 1.67) and Greece (mean impact factor of 1.53). Studies of scientists from different countries do not show any obvious preference to a single specific journal. It is interesting to note that preference for journals reveals the research interests of scientists from each country for sub-fields of analytical chemistry.

Keywords: Scientometrics, Analytical Chemistry, Publication Productivity, Impact Factor

Baker, H. and Khalili, F. (2004), Analysis of the removal of lead(II) from aqueous solutions by adsorption onto insolubilized humic acid: Temperature and pH dependence. *Analytica Chimica Acta*, **516** (1-2), 179-186.

Full Text: [A\Ana Chi Act516, 179.pdf](A/Ana%20Chi%20Act516,%20179.pdf)

Abstract: The removal of Pb(II) from aqueous solution by adsorption onto insolubilized humic acid (IHA) in single component system at different temperatures and different pH, and at constant ionic strength has been investigated. The experimental data have been analyzed using the Langmiur, Freundlich, and Redlich-Peterson isotherm models. In order to determine the best fit isotherm for each system, the experimental data has been fit to Langmiur and Redlich-Peterson models, while the worst correlation was obtained for the Freundlich model. The results, which were analyzed by the three models, showed temperature and pH dependence. The derived adsorption constants (log a(L)) and their temperature dependencies from Langmuir isotherm have been used to calculate the corresponding thermodynamic quantities such as the free energy of adsorption, heat and entropy of adsorption. The thermodynamic data indicate that Pb(II) adsorption onto IHA is entropically driven and characterized by physical adsorption. (C) 2004 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Isotherm Models, IHA, Lead, Thermodynamic Quantities, Industrial-Waste Water, Metal-Ions, Cadmium Adsorption, Activated Carbon, Exchange Method, Heavy-Metals, Cu(II), Sorption, Isotherm, Nickel

? Saeed, M.M. and Ahmed, M. (2004), Retention, kinetics and thermodynamics profile of cadmium adsorption from iodide medium onto polyurethane foam and its separation from zinc bulk. *Analytica Chimica Acta*, **525** (2), 289-297.

Full Text: [2004\Ana Chi Act525, 289.pdf](2004/Ana%20Chi%20Act525,%20289.pdf)

Abstract: The sorption behaviour of 2.5×10-5 M solution of Cd(II) on polyurethane foam (PUF) from iodide medium have been investigated. The conditions were optimized from aqueous solutions of different pH (1-10) and of acids of varied concentration (0.01-1.0 M). The maximum concentration of KI was found to be 0.24 M and equilibration time was established to be 20 min. The data successfully followed the Freundlich and Dubinin-Radushkevich (D-R) isotherms at low metal ion concentration while Langmuir isotherm followed at higher metal ion concentration. The Freundlich parameter 1/n = 0.66±0.02 have been evaluated whereas D-R isotherm yields the sorption free energy E = 10.5±0.1 kJ mol-1 indicating ion exchange type chemisorption. The monolayer coverage (X-L) constant of Langmuir isotherm was found to be 23.7±0.4 mg g-1. The numerical values of thermodynamics parameters enthalpy (DeltaH), entropy (DeltaS) and Gibbs free energy (DeltaG) indicated the endothermic and spontaneous nature of sorption. The Scatchard plot analysis was tested to evaluate the binding sites of the PUF and stability constants of sorption were determined. On the basis of these parameters, the sorption mechanism was discussed. Among the foreign ions tested, Pb(II), Hg(II), cyanide and nitrite should be absent. The clean separation of Cd(II) from Zn(II) ions in the ratio 1:250, respectively, was achieved by column chromatography. (C) 2004 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherms, Analysis, Aqueous Solutions, Atomic-Absorption Spectrometry, Behaviour, Cadmium, Cd(II), Chemisorption, Chromatography, Column, Column Chromatography, Complexes, Cyanide, D-R Isotherm, Endothermic, Enthalpy, Entropy, Equilibration, Extraction, Foreign Ions, Freundlich, Gibbs Free Energy, Hg(II), Ion Exchange, Ion-Exchange, Isotherm, Isotherms, Kinetics, Kinetics and Thermodynamics, Langmuir, Langmuir Isotherm, Mechanism, Metal, Monolayer, Nitrite, Pb(II), pH, Polyurethane, Polyurethane Foam, Preconcentration, Rights, Separation, Solution, Sorption, Sorption Mechanism, Stability, Thermodynamics, Water, Zinc, Zn(II), Zn(II) Ions

? El-Shahawi, M.S., Othman, A.M., Nassef, H.M. and bdel-Fadeel, M.A. (2005), An investigation into the retention profile and kinetics of sorption of the ternary complex ion associate of uranyl ions with crown ether and picric acid by the polyurethane foams. *Analytica Chimica Acta*, **536** (1-2), 227-235.

Full Text: [2005\Ana Chi Act536, 227.pdf](2005/Ana%20Chi%20Act536,%20227.pdf)

Abstract: The retention profile of uranyl ions from aqueous media by polyether-type-based polyurethane foams (PUFs) was studied to gain more information regarding the mechanism of uranyl ions extraction. The influence of pH, extraction time, picric acid (PC), crown ether (CE) and uranyl ions concentration on the sorption step by the PUFs was studied. The data revealed that the sorption of uranyl(II) ions involved formation of a ternary complex ion associate between uranyl(II) ions with crown ether and picric acid and its retention is highly dependent on the parameters studied. The dependency of the sorption percentage on the parameters was explained in a manner consistent with a “solvent extraction” mechanism. The kinetics of uranyl ions sorption onto crown-ether-loaded PUFs was found fast and followed a first-order rate constant in the presence of picric acid in the aqueous phase. The sorption data were also followed Langmuir, Freundlich and Dubinin-Radushkevich (D-R) isotherms over the entire concentration range of uranyl ions employed. Thus, a dual-mode sorption mechanism involves absorption related to “solvent extraction” and an added component for surface adsorption may be operated simultaneously. The proposed retention procedures were applied successfully for the determination of uranyl(II) ions and picric acid in aqueous media. (c) 2005 Elsevier B.V. All rights reserved.

Keywords: Absorption, Adsorption, Alkali-Metal Picrates, Amberlite XAD-4, Aqueous Phase, Behavior, Ce, Chromatographic-Separation, Crown Ether, Dependency, Ether, Freundlich, Information, Investigation, Isotherms, Kinetics, Langmuir, Lanthanum(III), Mechanism, Media, pH, Picric Acid, Polyurethane, Polyurethane Foams, Preconcentration, Procedures, PUFS, Rate Constant, Retention, Rights, Sea-Water, Solvent-Extraction, Sorption, Sorption Isotherms, Sorption Mechanism, Thorium(IV), Uranium Adsorption, Uranyl Ions

? El-Shahawi, M.S., Othman, M.A. and bdel-Fadeel, M.A. (2005), Kinetics, thermodynamic and chromatographic behaviour of the uranyl ions sorption from aqueous thiocyanate media onto polyurethane foams. *Analytica Chimica Acta*, **546** (2), 221-228.

Full Text: [2005\Ana Chi Act546, 221.pdf](2005/Ana%20Chi%20Act546,%20221.pdf)

Abstract: The retention profile of uranyl ions from aqueous thiocyanate media by polyether-type based polyurethane foams (PUFs) has been studied to gain more information regarding the mechanism of extraction. The effect of pH, shaking time, surfactant type, extraction media, temperature and analyte concentration on the retention of uranyl ions onto PUFs has been studied. It has been found that, the sorption of uranyl ions involved in the formation of a ternary complex ion associate of uranyl ion, thiocyanate and PUFs is highly dependent on these parameters. The kinetics and thermodynamics of the uranyl ions sorption have been studied in more detail. The dependency of the extraction on the parameters can be explained via a “solvent extraction,” mechanism. However, owing to the complex nature of the PUFs a dual-mode sorption mechanism involving both absorptions related to “solvent extraction” and an added component for “surface adsorption” may be operated simultaneously. Attempts for quantitative retention and recovery of the uranyl ions in tap and industrial waste water samples by the proposed PUFs columns has been carried out and satisfactory results have been obtained. The cellular structure of the PUF sorbent offer unique advantages over a conventional bulk type sorbents in rapid, versatile effective separation and/or preconcentration of uranyl ions. (c) 2005 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Amberlite XAD-4, Behaviour, Complex, Crown-Ethers, Dependency, Environmental-Samples, Extraction, Information, Kinetics, Kinetics and Thermodynamics, Mechanism, Media, pH, Phosphonic Acid, Polyurethane, Preconcentration, PUFS, Recovery, Retention, Rights, Separation, Sorbent, Sorbents, Sorption, Sorption Mechanism, Structure, Surfactant, Temperature, Thermodynamic, Thermodynamics, Thiocyanate, Thiocyanate Media, Uranium(VI), Uranyl Ions, Waste, Waste Water, Water

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Full Text: [2005\Ana Chi Act554, 86.pdf](2005/Ana%20Chi%20Act554,%2086.pdf)

Abstract: A highly sensitive and selective catalytic adsorptive cathodic striping procedure for the determination of trace tin is presented. The method is based on adsorptive accumulation of the Sn(IV)–3,4-dihydroxybenzoic acid (DHBA) complex onto a hanging mercury drop electrode, followed by reduction of the adsorbed species. The reduction current is enhanced catalytically by vanadium(IV). The optimal experimental conditions include the use of 0.10M formate buffer (pH 3.1), 8.0×10−5 M DHBA, 3.0×10−3 M V(IV), an accumulation potential of −0.30 V (versus SCE), an accumulation time of 60s, a scan rate of 200 mV/s and a second-order derivative linear scan mode. The peak current is proportional to the concentration of tin over the range of 0.01–40 μg/L, and the detection limit is 0.005μg/L for a 60 s adsorption time. The proposed method was applied to the determination of tin in canned food, human hair and waste water samples with satisfactory results.

Keywords: Catalytic Adsorptive Stripping Voltammetry, Tin, 3,4-Dihydroxybenzoic Acid, Vanadium

? Birlik, E., Ersoz, A., Denizli, A. and Say, R. (2006), Preconcentration of copper using double-imprinted polymer via solid phase extraction. *Analytica Chimica Acta*, **565** (2), 145-151.

Full Text: [2006\Ana Chi Act565, 145.pdf](2006/Ana%20Chi%20Act565,%20145.pdf)

Abstract: The aim of this study is to prepare double-imprinted polymers which can be used for the selective removal of Cu(II) ions from synthetic waters. Chitosan-succinate (CS) was choosen as the metal complexing polymer. In the first step, chitosan was modified with succinic anhydrides. Modified chitosan was complexed with copper(II) ions and then reacted with 3-(2-aminoethylamino) propyltrimethoxysilane (AAPTS). In the prepared imprinted sorbent, both Cu(II) and AAPTS were used as templates. Then polymeric beads were crosslinked with tetraethoxysilane (TEOS). After that, the template (i.e., Cu(II) ions) was removed using 0.1 M HNO3 solution. These Cu(II)-imprinted microbeads were used in the adsorption-desorption process. The effect of initial concentration of metal, the adsorption equilibria and the pH of the medium on adsorption capacity of Cu(II)-imprinting sorbents were studied. The maximum adsorption capacity and the relative selectivity coefficients of imprinted beads for Cu(II)/Zn(II), Cu(II)/Ni(II) and Cu(II)/Co(II) were also calculated. The double-imprinted polymers could be used many times without decreasing their adsorption capacities significantly. (c) 2006 Elsevier B.V. All rights reserved.

Keywords: Mispe, Double-Imprinted, Copper Determination, Chitosan, Preconcentration, Sol-Gel, Heavy-Metal Ions, Selective Separation, Aqueous-Solution, Chitosan Resin, Water Samples, Adsorption, Beads, Sorbents, Removal, Cadmium

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Full Text: [2007\Ana Chi Act584, 462.pdf](2007/Ana%20Chi%20Act584,%20462.pdf)

Abstract: 5,11,17,23-Tetrakis(1,1-dimethylethyl)-25,26-dihydroxy-27,28-crown-4-cal ix[4]arene in the cone conformation was synthesized. This p-tertbutylcalix[4]arene-1,2-crown-4 compound was then anchored with Merrifield chloromethylated resin beads. The modified polymeric resin was characterized by H-1 NMR, FT-IR and elemental analysis and used successfully for the separation and preconcentration of Cu(II), Cd(II), Co(II), Ni(II) and Zn(II) prior to their determination by FAAS. Effective extraction conditions were optimized in both batch and column methods. The resin exhibits good separating ability with maximum between pH 6.0-7.0 for Cu(II), pH 6.0 for Cd(II), pH 5.0 for Co(II), pH 4.0-4.5 for Ni(II), and pH 4.5 for Zn(H). The elution studies were carried out with 0.5 mol L-1 HCL for Cu(II), Co(II) and Co(II), 1.0 mol L-1 HCl for Cd(II) and Zn(II). The sorption capacity, preconcentration factor and distribution coefficient of each metal ion were determined. The detection limits were 1.10, 1.25, 1.83, 1.68 and 2.01 mu g L-1 for Cu(II), Cd(II), Co(II), Ni(II) and Zn(II). The influence of several ions on the resin performance was also investigated. The validity of the proposed method was checked for these metal ions in NIST standard reference material 2709 (San Joaquin Soil) and 2711 (Montana Soil). (c) 2006 Elsevier B.V. All rights reserved.

Keywords: Acid, Amberlite Xad-2, Analysis, Atomic-Absorption-Spectrometry, Batch, Beads, Calix[4]Arene, Calix[4]Crowns, Capacity, Cd(II), Chelating Resin, Co(II), Conformation, Copper Determination, Cu(II), Determination, Distribution Coefficient, Extraction, FAAS, FT-IR, FTIR, HCl, Ion Extraction, Liquid-Liquid-Extraction, Merrifield Resin, Metal Ions, Metals, Natural-Water Samples, Ni(II), NMR, pH, Polymeric Resin, Preconcentration, Resin, Separation, Sequential Separation, Soil, Sorption, Trace Metals, Transition Metals, Uranium(VI), Zn(II)

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Full Text: [2007\Ana Chi Act601, 218.pdf](2007/Ana%20Chi%20Act601,%20218.pdf)

Abstract: The influence of different parameters on the sorption profiles of trace and ultra traces of gold(I) species from the aqueous cyanide media onto the solid sorbents ion exchange polyurethane foams (IEPUFs) and commercial unloaded polyurethane foams (PUFs) based polyether type has been investigated. The retention of gold(I) species onto the investigated solid sorbents followed a first-order rate equation with an overall rate constant k in the range 2.2-2.8±0.2 s-1. The sorption data of gold(I) followed Freundlich and Langmuir isotherm models. Thus, the a dual-mode of sorption mechanism involving absorption related to “weak base anion exchanger” and an added component for “surface adsorption” seems the most likely proposed dual mechanism for retention profile of gold(I) by the IEPUFs and PUFs solid sorbents. The capacity of the IEPUFs and PUFs towards gold(I) sorption calculated from the sorption isotherms was found to be 11.21±11.8 and 5.29±0.9 mg g-1, respectively. The chromatographic separation of the spiked inorganic gold(I) from de ionized water at concentrations 5-15 μg mL-1 onto the developed IEPUFs and PUFs packed columns at 10 mL min-1 flow rate was successfully achieved. The retained gold(I) species were then recovered quantitatively from the IEPUFs (98.4±2.4%, n = 5) and PUFs (95.4±3.4%, n = 5) packed columns using perchloric acid (60 mL, 1.0 mol L-1) as a proper eluating agent. Thiourea (1.0 mol L-1)-H2SO4 (0.1 mol L-1) system was also used as eluating agent for the recovery of gold(I) from IEPUFS (95.4±5.4%, n = 3) and also PUFs (93.4±4.4%, n = 3) packed columns. The performance of the IEPUFs and PUFs packed columns in terms of the height equivalent to the theoretical plates (HETP), number of plates (N), and critical and breakthrough capacities towards gold(I) species were evaluated. The developed IEPUFs packed column was applied successfully for complete retention and recovery (98.5±2.7) of gold(III) species spiked onto tap-and industrial wastewater samples at < 10 mu g Au mL-1 after reduction to gold(I). The IEPUFs packed column was applied satisfactorily for complete retention and recovery (98.5 2.7) of total inorganic gold(I) and/or gold(III) species spiked to tap-and industrial wastewater samples at <10 mu g mL-1 gold. Chromatographic separation of gold(I) from silver(I) and base metal ions (Fe, Ni, Cu and Zn) using IEPUFS packed columns was satisfactorily achieved. The proposed method was applied successfully for the pre-concentration and separation from anodic slime and subsequent FAAS determination of analyte with satisfactory results (recoveries > 95%, relative standard deviations < 4.0%). (c) 2007 Elsevier B.V. All rights reserved.

Keywords: Absorption, Breakthrough, Capacity, Chromatographic Separation, Complexes, Cyanide, Environmental-Samples, Faas, Freundlich, Gold, Gold(I) Retention, Ion Exchange, Ion-Exchange, Isotherm, Isotherms, Kinetics, Langmuir, Langmuir Isotherm, Mechanism, Media, Membrane, Mercury, Metal, Metal Ions, Models, Packed Column, Polyurethane, Polyurethane Foam Sorbent, Preconcentration, Pufs, Recovery, Reduction, Retention, Rights, Separation, Silver, Silver and Base Metal Ions, Solid-Phase Extraction, Sorption, Sorption Isotherms, Sorption Mechanism, Sorption Models, Spectrometry, Spectrophotometric Determination, Standard, Transport, Wastewater, Water

? Galeano-Díaz, T., Guiberteau-Cabanillas, A., Espinosa-Mansilla, A. and López-Soto, M.D. (2008), Adsorptive stripping square wave voltammetry (Ad-SSWV) accomplished with second-order multivariate calibration - Determination of fenitrothion and its metabolites in river water samples. *Analytica Chimica Acta*, **618** (2), 131-139.

Full Text: [2008\Ana Chi Act618, 131.pdf](2008/Ana%20Chi%20Act618,%20131.pdf)

Abstract: A method, using stripping square wave voltammetry (Ad-SSWV), for the simultaneous determination of fenitrothion (FEN) and its metabolites: fenitrooxon (OXON) and 3-methyl-4-nitrophenol (3-MET) in environmental samples is reported. All three compounds produce, at mercury electrode (HMDE), an electrochemical signal due to an adsorptive-reductive process. The electrochemical approach shows a very high overlap degree for FEN and OXON voltammograms, however the adsorption kinetic profile could be used as an additional differential variable between both analytes. Second-order multivariate calibration has been tested to solve the mixture of the three compounds. The second-order assayed methods were parallel factor analysis (PARAFAC), unfolded partial least squares (U-PLS), multidimensional partial least squares (N-PLS) and the latest ones were used in combination with the residual bilinearization procedure RBL. U-PLS/RBL model was stated as the best second-order algorithm for the simultaneous determination of these three compounds up to 50 ng mL-1 for each analyte. The detection limits and recovery values were 1.6 ng mL-1 and 92±7% for FEN; 3.7 ng mL-1 and 101±9% for OXON and 0.6 ng mL-1 and 97±8% for 3-MET. (c) 2008 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Kinetic, Adsorptive Stripping Square Wave Voltammetry, Algorithm, Analysis, Chromatography-Mass Spectrometry, Electrochemical Detection, Environmental, Factor Analysis, Fenitrothion, Gas Chromatography, Kinetic, Liquid-Chromatography, Main Metabolites, Mercury, Metabolites, Methods, Model, Partial Least-Squares, Pesticides, PLS Calibration, Recovery, Rights, Second Order, Second-Order, Second-Order Multivariate Calibration, Soil, Spectral Analyses, Stripping, Unfolded Partial Least Squares, Residual Bilinearization, Water

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Full Text: [2009\Ana Chi Act636, 198.pdf](2009/Ana%20Chi%20Act636,%20198.pdf)

Abstract: The physical and chemical characteristics of peat were assessed through measurement of pH, percentage of organic matter, cationic exchange capacity (CEC), elemental analysis, infrared spectroscopy and quantitative analysis of metals by ICP OES. Despite the material showed to be very acid in view of the percentage of organic matter, its CEC was significant, showing potential for retention of metal ions. This characteristic was exploited by coupling a peat mini-column to a flow system based on the multicommutation approach for the in-line copper concentration prior to flame atomic absorption spectrometric determination. Cu(II) ions were adsorbed at pH 4.5 and eluted with 0.50 mol L-1 HNO3. The influence of chemical and hydrodynamic parameters, such as sample pH, buffer concentration, eluent type and concentration, sample flow-rate and preconcentration time were investigated. Under the optimized conditions, a linear response was observed between 16 and 100 mu g L-1, with a detection limit estimated as 3 mu g L-1 at the 99.7% confidence level and an enrichment factor of 16. The relative standard deviation was estimated as 3.3% (n = 20). The mini-column was used for at least 100 sampling cycles without significant variation in the analytical response. Recoveries from copper spiked to lake water or groundwater as well as concentrates used in hemodialysis were in the 97.3-111 % range. The results obtained for copper determination in these samples agreed with those achieved by graphite furnace atomic absorption spectrometry (GFAAS) at the 95% confidence level. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Biological Samples, Competitive Adsorption, Copper, Equilibrium Isotherm, Extraction, Flow Analysis, Grape Bagasse, Metal-Ions, Multicommutation, Online Preconcentration, Peat, Polyurethane Foam, Preconcentration, Trace-Elements, Water Samples

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Full Text: [2009\Ana Chi Act638, 146.pdf](2009/Ana%20Chi%20Act638,%20146.pdf)

Abstract: The present study describes the Pb2+ sorption potential of newly synthesized tetraester calix[4]arene (TC4) based resin from aqueous media. The TC4 resin was synthesized through diazotization reaction of TC4 with Amberlite XAD-4 in the presence of sodium nitrite in acidic medium. The TC4 resin was characterized by using different analytical techniques such as FT-IR, elemental analysis and scanning electron microscopy (SEM). The Pb2+ removal ability of the resin from the aqueous environment has been evaluated by both batch adsorption as well as column studies. The experiments have been conducted involving the determination of effect of pH. adsorbate concentration, adsorbent dosage, contact time and temperature. Moreover, on the basis of kinetic studies, the pseudo-first-order and pseudo-second-order adsorption kinetics were calculated. The thermodynamic parameters of lead adsorption were also calculated. Equation isotherms such as Langmuir (L), Freundlich (F), and Dubinin-Radushkevich (D-R) were successfully used to model the experimental data. From the D-R isotherm parameters, it was considered that the uptake of Pb2+ by TC4 resin is ion exchange mechanism. From the results it has been found that the TC4 resin is a versatile adsorbent for the removal of Ph2+ from the aqueous environment. The study also confers its impact on human health, reinstate of polluted sites and other fields of material science. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorbent, Adsorption, Adsorption Kinetics, Amberlite Resin, Amberlite XAD-4, Analysis, Batch, Calixarenes, Calix[4]Arene, Contact Time, Copper(II), Determination, Dubinin-Radushkevich, Environment, Equilibrium, Exchange, F, Freundlich, FT-IR, FTIR, Ion Exchange, Isotherm, Isotherms, Kinetic, Kinetics, Langmuir, Lead, Lead(II) Adsorption, Metal-Cations, Model, Nitrite, Pb2+, Pb2+ Removal, pH, Preconcentration, Pseudo Second Order, Removal, Resin, Samples, Science, SEM, Solid Phase Extraction, Solid-Phase Extraction, Sorption, Synthesis, Temperature, Thermodynamic, Thermodynamic Parameters, Trace-Metals, Uptake

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Full Text: [2009\Ana Chi Act650, 70.pdf](2009/Ana%20Chi%20Act650,%2070.pdf)

Abstract: The molecularly imprinted polymer with 2,4,6-trichlorophenol (2.4,6-TCP) as the template molecule and methylacrylic acid (MAA), divinylbenzene (DVB) as functional monomer and the crosslinker, respectively, has been prepared and used as molecularly imprinted micro-solid phase extraction (MIMSPE) procedure for the selectively preconcentration of phenolic compounds from environmental water samples. Various parameters for the extraction efficiency of the MIMSPE have been evaluated. The optimized MIMSPE method allowed the extraction of the analytes from the sample matrix followed by a selective washing step using acetonitrile containing 0.3% (v/v) acetic acid. The characteristics of the MIMSPE method were valid by high performance liquid chromatography. The recoveries ranged between 88.9% and 102.5% for tap water, between 80.0% and 94.0% for river water, between 80.0% and 90.5% for sewage water fortified with 0.4 mg L-1 of phenol, 4-chlorophenol (4-CP), 2,4-dichlorophenol (2,4-DCP), 2,4,6-TCP. pentachlorophenol (PCP) were obtained. This method has been successfully applied to preconcentrate and determine of phenolic compounds in environmental water samples directly. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Molecularly Imprinted Polymer, Micro-Solid Phase Extraction, Precipitation Polymerization, 2,4,6-Trichlorophenol, Phenolic Compounds, High Performance Liquid Chromatography, Precipitation Polymerization, Surface-Water, Microspheres, Recognition, Sorbent, Pentachlorophenol, 4-Nitrophenol, Chlorophenols, Spectrometry, Pollutants

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Full Text: [2010\Ana Chi Act665, 146.pdf](2010/Ana%20Chi%20Act665,%20146.pdf)

Abstract: A novel tyrosinase biosensor based on hydroxyapatite nanoparticles (nano-HA)-chitosan nanocomposite has been developed for the detection of phenolic compounds. The uniform and size controlled nano-HA was synthesized by hydrothermal method, and its morphological characterization was examined by transmission electron microscope (TEM). Tyrosinase was then immobilized on a nano-HA-chitosan nanocomposite-modified gold electrode. Electrochemical impedance spectroscopy and cyclic voltammetry were used to characterize the sensing film. The prepared biosensor was applied to determine phenolic compounds by monitoring the reduction signal of the biocatalytically produced quinone species at 0.2 V (vs. saturated calomel electrode). The effects of the pH, temperature and applied potential on the biosensor performance were investigated, and experimental conditions were optimized. The biosensor exhibited a linear response to catechol over a wide concentration range from 10 nM to 7 mu M, with a high sensitivity of 2.11 x 10(3) mu A mM(-1) cm(-2), and a limit of detection down to 5 nM (based on S/N =3). The apparent Michaelis-Menten constants of the enzyme electrode were estimated to be 3.16, 1.31 and 3.52 mu M for catechol, phenol and m-cresol, respectively. Moreover, the stability and reproducibility of this biosensor were evaluated with satisfactory results. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Hydroxyapatite, Tyrosinase, Biosensors, Phenolic Compounds, Chitosan, Flow-Injection Determination, Temperature Ionic Liquid, Direct Electron-Transfer, Sol-Gel Composite, Direct Electrochemistry, Amperometric Biosensor, Horseradish-Peroxidase, Gold Nanoparticles, Hydrogen-Peroxide, Glucose Biosensor

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Full Text: [2011\Ana Chi Act687, 177.pdf](2011/Ana%20Chi%20Act687,%20177.pdf)

Abstract: Calixarenes and their derivatives may be a promising material for enzyme immobilization owing to their particular configuration, unique molecule recognition function and aggregation properties. In this paper, p-tert-butylthiacalix[4]arene tetra-amine (TC4TA) was first used as enzyme immobilization material. This attractive material was exploited for the mild immobilization of glucose oxidase (GOD) to develop glucose amperometric biosensor. GOD was strongly adsorbed on the TC4TA modified electrode to form TC4TA/GOD composite membrane. The adsorption mechanism was driven from the covalent bond between amino-group of TC4TA and carboxyl group of GOD and molecule recognition function of TC4TA. Amperometric detection of glucose was evaluated by holding the modified electrode at 0.60 V (versus SCE) to oxidize the hydrogen peroxide generated by the enzymatic reaction. The sensor (TC4TA/GOD) showed a relative fast response (response time was about 5 s), low detection limit (20 mu M, S/N = 3), and high sensitivity (ca. 10.2 mA M-1 cm(-2)) with a linear range of 0.08-10 mM of glucose, as well as a good operational and storage stability. In addition, optimization of the biosensor construction, the effects of the applied potential as well as common interfering compounds on the amperometric response of the sensor were investigated and discussed herein. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Mechanism, Aggregation, Biosensor, Composite, Composite Film, Composite Membrane, Construction, Direct Electrochemistry, Effects, Ferrocene, First, Food Safety, Function, Glassy-Carbon Electrode, Glucose, Glucose Oxidase, Hydrogen, Hydrogen Peroxide, Immobilization, Immobilization Materials, Matrix, Mechanism, Membrane, Modified, Molecules, Nanotubes, Optimization, Oxidase, P-Tert-Butylthiacalix[4]Arene Tetra-Amine, Potential, Rights, Sce, Sensitivity, Sensor, Stability, Storage

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Full Text: [2011\Ana Chi Act687, 193.pdf](2011/Ana%20Chi%20Act687,%20193.pdf)

Abstract: In this study, chitosan-g-poly(acrylic acid) (CTS-g-PAA) hydrogel with crosslinked polymeric networks was prepared from an aqueous dispersion polymerization and then used as the adsorbent to recover a valuable metal, Ni2+. The adsorption capacity of CTS-g-PAA for Ni2+ was evaluated and the adsorption kinetics was investigated using Voigt-based model and pseudo-second-order model. In addition, the effects of pH values and coexisting heavy metal ions such as Cu2+ and Pb2+ on the adsorption capacity were studied. The results indicate that the as-prepared adsorbent has faster adsorption rate and higher adsorption capacity for Ni2+ recovery, with the maximum adsorption capacity of 161.80 mg g-1. In a wide pH range of 3-7, the adsorption capacity keeps almost the same, and even under competitive conditions, the adsorption capacity of CTS-g-PM for Ni2+ is observed to be as high as 54.47 mg g-1. Finally, the adsorption performance of CTS-g-PAA for Ni2+ in real water sample and the reusability of the as-prepared adsorbent were evaluated, and also the controlled adsorption mechanism was proposed. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption, Aqueous-Solutions, Chitosan, Heavy-Metals, Hydrogel, Mechanism, Methylene-Blue, Nickel, Nickel, Pb2+, Preconcentration, Recovery, Removal, Solid-Phase Extraction

? Cela-Pérez, M.C., Castro-López, M.M., Lasagabáster-Latorre, A., López-Vilariño, J.M., González-Rodríguez, M.V. and Barral-Losada, L.F. (2011), Synthesis and characterization of bisphenol-A imprinted polymer as a selective recognition receptor. *Analytica Chimica Acta*, **706** (2), 275-284.

Full Text: [2011\Ana Chi Act706, 275.pdf](2011/Ana%20Chi%20Act706,%20275.pdf)

Abstract: Molecularly imprinted polymers (MIPs) are currently used to provide selectivity in chemical sensors. In this context, a non-covalent bisphenol-A (BPA)-imprinted polymer using 4-vinylpyridine (4-Vpy) as the functional monomer, ethylene glycol dimethacrylate (EGDMA) as crosslinker and a low volatile solvent, triethylene glycol dimethyl ether (TRIGLYME), in combination with a non-reactive linear polymer, poly (vinyl acetate) (PVAc), as porogen, was synthesized with a simple polymerization procedure. Batch rebinding experiments were carried out to evaluate the binding and selectivity properties of the BPA-MIP. The experimental adsorption isotherms were fitted and a heterogeneous distribution of the binding sites was found. The selectivity of MIP demonstrated higher affinity for target BPA and BPA-analogues over other common water pollutants. The adsorption kinetics followed the pseudo-second-order kinetic model so that the specific adsorption in the imprinted cavities by two strong hydrogen bonds could be described as a chemisorption process. The diffusion mechanism was determined by the intra-particle diffusion and Boyd models, both of them revealing that the adsorption was mainly governed by intra-particle diffusion. MIP was shown to be promising for regeneration without significant loss in adsorption capacity. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Adsorptive Removal, Affinity Distribution, Binding-Properties, Bisphenol-A, Kinetics, Microspheres, Molecularly Imprinted Polymer, Nanoparticles, Precipitation Polymerization, Samples, Separation, Solid-Phase Extraction, Thermodynamics

# Title: Analytical and Bioanalytical Chemistry

Full Journal Title: [Analytical and Bioanalytical Chemistry](http://www.environmental-center.com/magazine/springer/00216/); [Analytical and Bioanalytical Chemistry](http://www.springeronline.com/sgw/cda/frontpage/0,11855,5-175-70-1023710-0,00.html)

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Sweileh, J.A. (2003), Sorption of trace metals on human hair and application for cadmium and lead pre-concentration with flame atomic absorption determination. *Analytical and Bioanalytical Chemistry*, **375** (5), 450-455.

Full Text: [A\Ana Bio Che375, 450.pdf](A/Ana%20Bio%20Che375,%20450.pdf)

Abstract: Human hair shavings were characterized as a sorbent for trace metals. At pH 7.0 metal sorption follows the order Pb(II)>Cd(II)>Cr(VI)>Fe(III)>Cu(II)>Ni(II)>Mn(VI). Metal recovery is quantitative for Pb and Cd after 30 min of equilibration. Recovery of other metals is less quantitative and varies with pH. For example, while Cu is best recovered at pH 5, Ni and Mn are sorbed optimally in the basic pH region. Sorbed metals can be washed off the sorbent with 0.5 mol L-1 strong mineral acids or more completely with 0.1 mol L-1 ethylenediaminetetraacetic acid (EDTA). Typical sorption isotherms were obtained for Cd and Pb with sorption capacities of 39 and 26 mumol g-1, respectively.

Hair sorbent was used for 40-fold pre-concentration of Cd and Pb from treated wastewater samples followed by flame atomic absorption spectroscopic (FAAS) determination. Comparison of the data obtained for lead and cadmium by the proposed pre-concentration method with that by graphite furnace atomic absorption spectroscopy (GFAAS) showed 79 to 86% recovery and comparable analytical precision. Common cations and anions at the levels normally present in natural water do not interfere in the proposed pre-concentration-FAAS method.

Keywords: Atomic Absorption, Cadmium, Hair, Lead, Preconcentration, Sorption, Flow-Injection, Online Preconcentration, Ion-Exchange, Natural-Waters, Spectrometry, Copper, Zinc, Separation, Samples, Pb

Cervera, M.L., Arnal, M.C. and de la Guardia, M. (2003), Removal of heavy metals by using adsorption on alumina or chitosan. *Analytical and Bioanalytical Chemistry*, **375** (6), 820-825.

Full Text: [A\Ana Bio Che375, 820.pdf](A/Ana%20Bio%20Che375,%20820.pdf)

Abstract: The removal of heavy metals from wastewater by using activated alumina or chitosan as adsorbers was evaluated. Cd(II) and Cr(III) were employed as models of the behaviour of divalent and trivalent metal ions. The adsorption of Cd(Il) and Cr(III) onto the adsorbers evaluated was studied as a function of pH, time, amount of adsorber, concentration of metal ions and sample volume. A 0.4-g portion of activated alumina can retain 0.6 mg Cr(III) and 0.2 mg Cd(II) from 20 mL sample adjusted at pH 4 and stirred for 30 min. It is therefore possible to totally decontaminate 500 mL of a waste containing 5 mg L-1 Cd(II) and Cr(III) with 10 g alumina. On the other hand, 0.4 g chitosan can totally decontaminate 20 mL of a pH 5 solution containing up to 50 mg L-1 Cd(II) and Cr(III). A 99.2±0.1% retention of Cd(II) and 83±1% retention of Cr(III) was obtained from 500 mL of a laboratory waste. The aforementioned strategies were applied for the minimization of analytical chemistry teaching laboratories and atomic spectrometry laboratory wastes. On comparing both adsorbers it can be concluded that chitosan is more preferable than alumina due to the reduced price of chitosan and the absence of side-pollution effects.

Keywords: Metal Ion Removal, Chitosan, Alumina, Cadmium, Chromium, Online Preconcentration, Activated Alumina, Aqueous-Solutions, Waste-Water, Ions, Chromium, Flakes

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Full Text: [2004\Ana Bio Che378, 9.pdf](2004/Ana%20Bio%20Che378,%209.pdf)

? Liu, N. and Song, J.F. (2005), Catalytic adsorptive stripping voltammetric determination of copper(II) on a carbon paste electrode. *Analytical and Bioanalytical Chemistry*, **383** (2), 358-364.

Full Text: [2005\Ana Bio Che383, 358.pdf](2005/Ana%20Bio%20Che383,%20358.pdf)

Abstract: A catalytic adsorptive stripping voltammetric method for the determination of copper(II) on a carbon paste electrode (PCE) in an alizarin red S (ARS)-K2S2O8 system is proposed. In this method, copper(II) is effectively enriched by both the formation and adsorption of a copper(II)-ARS complex on the PCE, and is determined by catalytic stripping voltammetry. The catalytic enhancement of the cathodic stripping current of the Cu(II) in the complex results from a redox cycle consisting of electrochemical reduction of Cu(II) ion in the complex and subsequent chemical oxidation of the Cu(II) reduction product by persulfate, which reduces the contamination of the working electrode from Cu deposition and also improves analytical sensitivity. In Britton-Robinson buffer (pH 4.56±0.1) containing 3.6×10-5 mol L-1 ARS and 1.6×10-3 mol L-1 K2S2O8, with 180 s of accumulation at -0.2 V, the second-order derivative peak current of the catalytic stripping wave was proportional to the copper(II) concentration in the range of 8.0×10-10 to similar to 3.0×10-8 mol L-1. The detection limit was 16×10-10 mol L-1. The proposed method was evaluated by analyzing copper in water and soil.

Keywords: Copper, Alizarin Red S, Persulfate, Carbon Paste Electrode, Catalytic Adsorptive Stripping, Voltammetry, Pyrogallol Red, Complex, Polarography, Molybdenum, Seawater, Behavior, Systems, Morin, Ions, Acid

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Full Text: [2006\Ana Bio Che385, 665.pdf](2006/Ana%20Bio%20Che385,%20665.pdf)

Abstract: Determination of thallium has become a major interest because of its high toxicity, especially as the monovalent cation. Thallium poisoning in the human body must be checked quickly by analysis of biological samples. This review highlights the development of highly sensitive detection techniques applied to the determination of thallium in biological samples, with or without pretreatment, based on the literature compiled in Analytical Abstracts from 1990.

Keywords: Review, Thallium, Biological Samples, Method Comparability, Plasma-Mass Spectrometry, Atomic-Absorption Spectrometry, ETV-ICP-MS, Whole-Blood, Activation Analysis, Thermal Ionization, Graphite-Furnace, Trace-Elements, Body-Fluids, Urine

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Full Text: [2007\Ana Bio Che387, 1143.pdf](2007/Ana%20Bio%20Che387,%201143.pdf)

Keywords: Personal Care Products, Tandem Mass-Spectrometry, Solid-Phase Extraction, US Surface Waters, Liquid-Chromatography, Estrogenic Chemicals, River Water, In-Vitro, Environment, Diclofenac

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Full Text: [2010\Ana Bio Che398, 17.pdf](2010/Ana%20Bio%20Che398,%2017.pdf)

Keywords: Bibliometric Indicators, Citation, Countries, Evolution, Hirsch-Index, Journals, Normalized Impact Factor, Productivity, Scientific-Research Output, Subject Categories

? Annibaldi, A., Truzzi, C., Illuminati, S. and Scarponi, G. (2010), Scientometric analysis of national university research performance in analytical chemistry on the basis of academic publications: Italy as case study (vol 398, pg 17, 2010). *Analytical and Bioanalytical Chemistry*, **398** (7-8), 3227.

Full Text: [2010\Ana Bio Che398, 3227.pdf](2010/Ana%20Bio%20Che398,%203227.pdf)

Keywords: Analysis, Italy, Performance, Publications, Research, Research Performance

# Title: Analytical Biochemistry

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Biochemistry & Molecular Biology: Impact Factor 1.976, 148/310 (2000); Impact Factor 2.019, 145/308 (2001); Impact Factor 3.088, 108/275 (2008); Impact Factor, 3.287, 100/283 (2009)

Chemistry, Analytical: Impact Factor 1.976, / (2000); Impact Factor 2.019, 14/68 (2001); Impact Factor 3.088, 14/70 (2008); Impact Factor, 3.287, 10/70 (2009)

Cohen, S.R. (1968), “Best values” of Michaelis-Menten kinetic constants from experimental data. *Analytical Biochemistry*, **22** (3), 549-552.

Full Text: [A\Ana Bio22, 549.pdf](A/Ana%20Bio22,%20549.pdf)

Notes: highly cited, 135,837 times, 24/08/2011, The top third in the world

? Bradford, M.M. (1976), Rapid and sensitive method for quantitation of microgram quantities of protein utilizing principle of protein-dye binding. *Analytical Biochemistry*, **72** (1-2), 248-254.

Full Text: [1960-80\Ana Bio72, 248.pdf](1960-80/Ana%20Bio72,%20248.pdf)

A protein determination method which involves the binding of Coomassie Brilliant Blue G-250 to protein is described. The binding of the dye to protein causes a shift in the absorption maximum of the dye from 465 to 595 nm, and it is the increase in absorption at 595 nm which is monitored. This assay is very reproducible and rapid with the dye binding process virtually complete in approximately 2 min with good color stability for 1 hr. There is little or no interference from cations such as sodium or potassium nor from carbohydrates such as sucrose. A small amount of color is developed in the presence of strongly alkaline buffering agents, but the assay may be run accurately by the use of proper buffer controls. The only components found to give excessive interfering color in the assay are relatively large amounts of detergents such as sodium dodecyl sulfate, Triton X-100, and commercial glassware detergents. Interference by small amounts of detergent may be eliminated by the use of proper controls.

Notes: highly cited

? Duggleby, R.G. (1981), A non-linear regression program for small computers. *Analytical Biochemistry*, **110** (1), 9-18.

Full Text: [1981\Ana Bio110, 9.pdf](1981/Ana%20Bio110,%209.pdf)

Abstract: A BASIC computer program for performing weighted nonlinear regression is described and a listing of the program is given. The program, which is small and simple to use, has been designed to be run by users with little knowledge of mathematics or computers. Robust methods of analysis are described which may be applied to data in which experimental errors are not normally distributed, and the program incorporates one such method. It is shown that the program is useful for the analysis of data conforming to the Michaelis-Menten equation, a single exponential, and to binding equations, and other applications are discussed.

Notes: highly cited, 14,259 times, 24/08/2011

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Full Text: [1985\Ana Bio150, 76.pdf](1985/Ana%20Bio150,%2076.pdf)

Abstract: Bicinchoninic acid, sodium salt, is a stable, water-soluble compound capable of forming an intense purple complex with cuprous ion (Cu1+) in an alkaline environment. This reagent forms the basis of an analytical method capable of monitoring cuprous ion produced in the reaction of protein with alkaline Cu2+ (biuret reaction). The color produced from this reaction is stable and increases in a proportional fashion over a broad range of increasing protein concentrations. When compared to the method of Lowry et al., the results reported here demonstrate a greater tolerance of the bicinchoninate reagent toward such commonly encountered interferences as nonionic detergents and simple buffer salts. The stability of the reagent and resulting chromophore also allows for a simplified, one-step analysis and an enhanced flexibility in protocol selection. This new method maintains the high sensitivity and low protein-to-protein variation associated with the Lowry technique.

Keywords: Protein Determination, Bicinchoninic Acid, Measurement

Perrella, F.W. (1988), EZ-FIT: A practical curve-fitting microcomputer program for the analysis of enzyme kinetic data on IBM-PC compatible computers. *Analytical Biochemistry*, **174** (2), 437-447.

Full Text: [A\Ana Bio174, 437.pdf](A/Ana%20Bio174,%20437.pdf)

Abstract: EZ-FIT, an interactive microcomputer software package, has been developed for the analysis of enzyme kinetic and equilibrium binding data. EZ-FIT was designed as a user-friendly menudriven package that has the facility for data entry, editing, and filing. Data input permits the conversion of cpm, dpm, or optical density to molar per minute per milligram protein. Data can be fit to any of 14 model equations including Michaelis-Menten, Hill, isoenzyme, inhibition, dual substrate, agonist, antagonist, and modified integrated Michaelis-Menten. The program uses the Nelder-Mead simplex and Marquardt nonlinear regression algorithms sequentially. A report of the results includes the parameter estimates with standard errors, a Student *t* test to determine the accuracy of the parameter values, a Runs statistic test of the residuals, identification of outlying data, an Akaike information criterion test for goodness-of-fit, and, when the experimental variance is included, a χ2 statistic test for goodness-of-fit. Several different graphs can be displayed: an *X*-*Y*, a Scatchard, an Eadie-Hofstee, a Lineweaver-Burk, a semilograithmic, and a residual plot. A data analysis report and graphs are designed to evaluate the goodness-of-fit of the data to a particular model.

Keywords: computer methods; nonlinear regression; enzyme kinetics; model discrimination; simulated data

Fjellstedt, T.A. and Schlesselman, J.J. (1977), A simple statistical method for use in kinetic analysis based on Lineweaver-Burk plots. *Analytical Biochemistry*, **80** (1), 224-238.

Full Text: [A\Ana Bio80, 224.pdf](A/Ana%20Bio80,%20224.pdf)

Abstract: Statistical methods for the analysis of initial-velocity and/or inhibition data are described. They involve application of *F* tests (i) to determine goodness of fit to the first-order Michaelis-Menten equation, (II) to predict the reaction mechanism by assessing slope and *y*-intercept effects in Lineweaver-Burk plots according to the inspection rules of Cleland [Cleland, W. W. (1963) *Biochim. Biophys. Acta* 67, 188–196], (III) to test the linearity of the replots of slopes or *y*-intercepts versus the reciprocal of the substrate concentration or the inhibitor concentration, and (IV) to estimate the true *Km* or *Ki* values from these replots. The method serves to fill a gap in the kinetic analysis methodology between the antiquated graphical method and the sophisticated direct computer-fitting of data to a variety of possible rate equations. The entire theoretical and computational format is provided to allow the investigator to apply these statistical tests to his data using only a desk-top calculator.

Duggleby, R.G. (1981), A non-linear regression program for small computers. *Analytical Biochemistry*, **110** (1), 9-18.

Full Text: [A\Ana Bio110, 9.pdf](A/Ana%20Bio110,%209.pdf)

Abstract: A BASIC computer program for performing weighted nonlinear regression is described and a listing of the program is given. The program, which is small and simple to use, has been designed to be run by users with little knowledge of mathematics or computers. Robust methods of analysis are described which may be applied to data in which experimental errors are not normally distributed, and the program incorporates one such method. It is shown that the program is useful for the analysis of data conforming to the Michaelis-Menten equation, a single exponential, and to binding equations, and other applications are discussed.

Northrop, D.B. (1983), Fitting enzyme-kinetic data to V/K. *Analytical Biochemistry*, **132** (2), 457-461.

Full Text: [A\Ana Bio136, 457.pdf](A/Ana%20Bio136,%20457.pdf)

Abstract: Kinetic data from enzyme-catalyzed reactions have been analyzed traditionally in terms of the Michaelis-Menten equation, which assumes that the maximal velocity (V) and the Michaelis constant (K) are the primary kinetic constants. But what is needed from most kinetic studies today is V/K. A new form of the equation is proposed which assumes that V and V/K are the primary kinetic constants: v = (V·S·V/K)/(V+S·V/K). Computer fittings of both experimental and simulated velocity data to both equations give results favoring the new equation.

Wilkins, R.J. and Kearney, J.T. (1984), Fluorometric assays for DNA deposited on filters. *Analytical Biochemistry*, **136** (2), 301-308.

Full Text: [A\Ana Bio136, 301.pdf](A/Ana%20Bio136,%20301.pdf)

Abstract: Procedures for collecting DNA from dilute solutions as small spots of the insoluble cetyltrimethylammonium salt deposited on either glass fiber or Millipore filters are described. This method of concentration facilitates the fluorescent assay of DNA, either by a microreaction in which the spots on glass fiber are punched out, reacted with a small volume of 3,5-diaminobenzoic acid, and then assayed in a microcuvette or, alternatively, by spotting the DNA onto black Millipore filters and soaking these in ethidium bromide so that the fluorescence of each spot can be measured by direct scanning. These methods are capable of detecting DNA amounts as low as, respectively, 50 and 10 ng. The most important advantage in this procedure is not, however, its intrinsic sensitivity but, rather, the ability to recover and assay DNA from very dilute solutions. The use of silver both to stain DNA on filters and to enhance the sensitivity of the 4’,6-diamidino-2-phenylindole fluorescence method of estimating DNA is also briefly described.

Keywords: Fluorometric, Cetyltrimethylammonium Bromide, DNA, Precipitation, 3,5-Diaminobenzoic Acid, Ethidium Bromide

Vera, J.C. and Rivas, C. (1988), Fluorescent labeling of nitrocellulose-bound proteins at the nanogram level without changes in immunoreactivity. *Analytical Biochemistry*, **173** (2), 399-404.

Full Text: [A\Ana Bio173, 399.pdf](A/Ana%20Bio173,%20399.pdf)

Abstract: Proteins blotted on nitrocellulose were stained with either 5-dimethylamino-1-naphthalene-sulfonylchloride (dansyl chloride) or fluorescein isothiocyanate. In both cases the staining procedure can be completed in less than 30 min. The sensitivity for detecting fluorescent-labeled proteins on nitrocellulose was 0.5 ng using a dot test. This was accomplished by transparentizing the nitrocellulose with either immersion oil or toluene. Dansylated proteins were successfully utilized for optimizing the electroblotting procedure. In the presence of 0.2% sodium dodecyl sulfate and 20% methanol the distribution of proteins on the nitrocellulose was an exact replica of the protein pattern seen in the polyacrylamide gel. The fluorescent labeling did not affect the antigenic properties of proteins allowing the subsequent probing with antisera. For this procedure, only one set of samples is needed to obtain accurate photographic records of the gel, the nitrocellulose blot, and the probed blot.

Keywords: Blot Staining, Dansyl Chloride, Fluorescein Isothiocyanate, Electrotransfer, Immunoreactivity, Nitrocellulose

Ogura, M. and Mitsuhashi, M. (1994), Screening method for a large quantity of polymerase chain-reaction products by measuring yoyo-1 fluorescence on 96-well polypropylene plates. *Analytical Biochemistry*, **218** (2), 458-459.

Full Text: [A\Ana Bio218, 458.pdf](A/Ana%20Bio218,%20458.pdf)

Keywords: Amplification, Sequences

O’Shannessy, D.J. and Winzor, D.J. (1996), Interpretation of deviations from pseudo-first-order kinetic-behavior in the characterization of ligand binding by biosensor technology. *Analytical Biochemistry*, **236** (2), 275-283.

Full Text: [A\Ana Bio236, 275.pdf](A/Ana%20Bio236,%20275.pdf)

Abstract: Macromolecular interactions observed using surface plasmon resonance technology (BIAcore, Pharmacia) often display kinetic behavior which deviates from the pseudo-first-order time dependence that has been predicted for 1: 1 interactions of ligand and ligate. In the present study we review the major reasons for such deviations and present results which suggest that the most common source of deviations from the pseudo-first-order kinetic approximation of BIAcore kinetic data is likely to be heterogeneity of the immobilized ligand sites. A simplified analysis of the adsorption stage of BIAcore data is presented in terms of the *net observed* pseudo-first-order rate constant, *k*obs, rather than in terms of the association and dissociation rate constants, *k*a and *k*d. The analysis is then extended to the determination of the dissociation equilibrium constant for the interaction of ligand and ligate in the solution phase from sensorgrams reflecting competition between soluble and immobilized forms of ligand for ligate.

Keywords: Surface-Plasmon Resonance, Monoclonal-Antibody, Constants, Protein, Dissociation, Peptides, Affinity

Hall, D.R., Gorgani, N.N., Altin, J.G. and Winzor D.J. (1997), Theoretical and experimental considerations of the pseudo-first-order approximation in conventional kinetic analysis of IAsys biosensor data. *Analytical Biochemistry*, **253** (2), 145-155.

Full Text: [A\Ana Bio253, 145.pdf](A/Ana%20Bio253,%20145.pdf)

Abstract: The validity of the conventional interpretation of IAsys biosensor profiles in terms of pseudo-first-order kinetic behavior is subjected to closer scrutiny by its application to simulated data for low- and high-affinity interactions between ligate and immobilized ligand. As might reasonably have been expected, analysis of the simulated data for the low-affinity system (association equilibrium constant of 105 M-1) in such terms returned the input association and dissociation rate (103 M-1 s-1 and 10-2 s-1, respectively)-a consequence of essential compliance with the assumed constancy of ligate concentration in the liquid phase. For the high-affinity interaction (ka = 105 M-1 s-1, kd = 10-2 s-1, K-AX = 107 M-1) the ligate concentration was depleted by up to 35%, and hence its assumed constancy was clearly an untenable approximation. Whereas no symptomatic evidence of such violation (apart from the return of incorrect estimates of k(a) and k(d)) was evident from pseudo-first-order kinetic analysis of the adsorption profiles, the corresponding analysis of desorption profiles was more informative in that the data deviated demonstrably from pseudo-first-order kinetic behavior. A second-order kinetic analysis was therefore developed and shown to be applicable to adsorption and desorption profiles, irrespective of the validity or otherwise of the pseudo-first-order kinetic approximation. Experimental results obtained for the interaction of histidine-rich glycoprotein with immobilized IgG were then used to illustrate various features of the pseudo-first order and second-order kinetic analyses, and to determine from the second-order analysis an association equilibrium constant of 2×108 M-1, which is 20-fold greater than the value obtained by interpretation of the profiles in terms of pseudo-first-order kinetic behavior. (C) 1997 Academic Press.

Keywords: Surface-Plasmon Resonance, Binding Constants, Mass-Transport, Ligand-Binding, Receptor, Technology

? Sharma, S. and Agarwal, G.P. (2003), Interactions of proteins with immobilized metal ions: A comparative analysis using various isotherm models. *Analytical Biochemistry*, **288** (2), 126-140.

Full Text: [2003\Ana Bio288, 126.pdf](2003/Ana%20Bio288,%20126.pdf)

Abstract: Immobilized metal ion affinity chromatography (IMAC) is now a widely accepted technique for the purification of natural and recombinant therapeutic products and is beginning to find industrial applications. The design, optimization, and scale-up of a chromatographic process using IMAC demands a thorough understanding to be developed regarding the fundamental factors governing the various interactions between immobilized metal ions and proteins. Consequently, there is an immediate need to find out a theory that is able to account for these interactions most efficiently in a qualitative as well as a quantitative manner. In view of this requirement, the interactions of several model proteins (lysozyme, ovalbumin, bovine serum albumin, conalbumin, and wheat germ agglutinin) with metal (Cu(II), Ni(II)-chelated IDA (iminodiacetate) and tris(2-aminoethyl)amine were investigated. The adsorption data were analyzed using four isotherm models, viz., the general affinity interaction theory/Langmuir model, the Freundlich model, the Temkin model, and the Langmuir-Freundlich model, and the sorption parameters were computed. Although the first three models mere applicable to some protein-IMA-M(II) systems, the Langmuir-Freundlich model appeared to be the most efficient model for explaining the interactions of proteins with IMA-M(II) gels. Also, this model was able to explain cooperativity and binding heterogeneity in quantitative terms. It is envisaged that this analysis would be useful in developing an improved understanding of protein-immobilized metal ion interactions and providing guidelines for designing preparative-scale separations using IMAC. (C) 2001 Academic Press.

Keywords: Immobilized Metal Affinity, Iminodiacetic Acid, Tris(2-Aminoethyl)Amine, Protein Adsorption, Interaction, Performance Liquid-Chromatography, Affinity-Chromatography, Amino-Acids, Surface-Topography, Histidine-Residues, Capacity, Binding, Fractionation, Adsorption, Sorbents

Bertsch, M., Mayburd, A.L. and Kassner, R.J. (2003), The identification of hydrophobic sites on the surface of proteins using absorption difference spectroscopy of bromophenol blue. *Analytical Biochemistry*, **313** (2), 187-195.

Full Text: [A\Ana Bio313, 187.pdf](A/Ana%20Bio313,%20187.pdf)

Abstract: Hydrophobic sites on the surface of protein molecules are thought to have important functional roles. The identification of such sites can provide information about the function and mode of interaction with other cellular components. While the fluorescence enhancement of polarity-sensitive dyes has been useful in identifying hydrophobic sites on a number of targets, strong intrinsic quenching of Nile red and ANSA dye fluorescence is observed on binding to a cytochrome *c*’. Fluorescence quenching is also observed to take place in the presence of a variety of other biologically important molecules which can compromise the quantitative determination of binding constants. Absorption difference spectroscopy is shown not to be sensitive to the presence of fluorescence quenchers but sensitive enough to measure binding constants. The dye BPB is shown to bind to the same hydrophobic sites on proteins as polarity-sensitive fluorescence probes. The absorption spectrum of BPB is also observed to be polarity sensitive. A binding constant of 3×106 M-1 for BPB to BSA has been measured by absorption difference spectroscopy. An empirical correlation is observed between the shape of the absorption difference spectrum of BPB and the polarity of the environment. The results indicate that absorption difference spectroscopy of BPB provides a valuable supplement to fluorescence for determining the presence of hydrophobic sites on the surface of proteins as well as a method for measuring binding constants.

Keywords: Protein Structure, Hydrophobic Sites, Polarity-Sensitive Dyes, Absorption Difference, Fluorescence Spectroscopy

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Full Text: [A\Ana Bio316, 58.pdf](A/Ana%20Bio316,%2058.pdf)

Abstract: A straightforward and empirical regression method based on a logarithmic approximation has been developed to accurately estimate initial rates from nonlinear progress curves of enzyme reactions. The principle of this parametric approach is to use a relatively large number of observations, while averaging out random errors, to predict the curvature at time zero, which has the highest rate of change. The usual linear regression of a few initial time points lacks prediction power at time zero and therefore underestimates the true initial rate. Application of this nonlinear regression approach to enzyme reactions demonstrated satisfactory results. This approach is less subjective in choosing initial time points to be used for rate determination, and much more robust to random errors. Moreover, it is relatively easy to realize with commonly available software.

Author Keywords: Initial Rates; Enzyme Reactions; Progress Curves; Nonlinear Fitting, Logarithmic Approximation, Michaelis-Menten Equation

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? Tang, H., Chen, J.H., Yao, S.Z., Nie, L.H., Deng, G.H. and Kuang, Y.F. (2004), Amperometric glucose biosensor based on adsorption of glucose oxidase at platinum nanoparticle-modified carbon nanotube electrode. *Analytical Biochemistry*, **331** (1), 89-97.

Full Text: [2004\Ana Bio316, 89.pdf](2004/Ana%20Bio316,%2089.pdf)

Abstract: A new amperometric biosensor, based on adsorption of glucose oxidase (GOD) at the platinum nanoparticle-modified carbon nanotube (CNT) electrode, is presented in this article. CNTs were grown directly on the graphite substrate. The resulting GOD/Pt/CNT electrode was covered by a thin layer of Nafion to avoid the loss of GOD in determination and to improve the anti-interferent ability. The morphologies and electrochemical performance of the CNT, Pt/CNT, and Nafion/GOD/Pt/CNT electrodes have been investigated by scanning electron microscopy, cyclic voltammetry, and amperometric methods. The excellent electrocatalytic activity and special three-dimensional structure of the enzyme electrode result in good characteristics such as a large determination range (0.1-13.5 mM), a short response time (within 5 s), a large current density (1.176mA cm(-2)), and high sensitivity (91 mA M-1 cm(-2)) and stability (73.5% remains after 22 days). In addition, effects of pH value, applied potential, electrode construction, and electroactive interferents on the amperometric response of the sensor were investigated and discussed. The reproducibility and applicability to whole blood analysis of the enzyme electrode were also evaluated. (C) 2004 Elsevier Inc. All rights reserved.

Keywords: Carbon Nanotubes, Platinum Nanoparticle, Nafion, Glucose Oxidase, Biosensor, Electrocatalytic Oxidation, Electrochemical Sensors, Powder Microelectrode, Films, Immobilization, Behavior, Enzymes, Nafion, Arrays, Layer

# Title: Analytical Chemistry

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Abstract: The theory of stationary electrode polarography for single scan and cyclic triangular wave experiments has been extended to describe electrochemical systems where either the reactant, the product, or both the reactant and product are adsorbed at the electrodesolution interface (Langmuir isotherm). A numerical method was applied to solve the integral equations obtained from the boundary value problems, and extensive data were calculated which made it possible to characterize quantitatively the adsorption parameters of the system. Correlation of theoretical and experimental parameters made it possible to develop diagnostic criteria sa that unknown systems could be characterized by studying the variation of peak shape and peak current as a function of scan rate and bulk concentration.

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Abstract: A combination of multielement chelation by 8-hydroxyquinoline with subsequent adsorption on activated carbon was developed for trace metal preconcentration. Adsorption characteristics of 8-quinolinol and metal quinolates on activated carbon were investigated in order to optimize the enrichment procedure. Interferences from alkali and alkaline earth ions were mhimized and working conditions for preconcentration from very differing samples were calculated. For about 20 elements simultaneously an enrichment factor of 10,000, precision of 5 to 10%, and a recovery from 85 to 100% were demonstrated.

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Full Text: [1989\Ana Che61, 1867.pdf](1989/Ana%20Che61,%201867.pdf)

Abstract: A method Is described for the atomic absorptlon spectrometrlc determlnatlon of lead In natural waters and blologlcal tlssues based on the generation of Pb(C2H6)4 using NaB(C2H5)4 with its subsequent trapplng In a graphite furnace at 400°C. Quantltatlon Is achleved by uslng a simple callbration graph prepared from aqueous standards having a sensltlvlty of 0.150±0.006 A ng-1. An absolute detection limit (3a) of 14 pg is achleved. Preclslon of determlnatlon at 100 pg/mL is 4% relatlve standard deviation. Results are reported for the determlnatlon of Pb In a sulte of marlne reference materials.

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Full Text: [1991\Ana Che63, A12.pdf](1991/Ana%20Che63,%20A12.pdf)

Keywords: Inductively-Coupled Plasma, Atomic Emission-Spectrometry, Mass-Spectrometry, Interferences, Signals, Acid, AES

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Full Text: [1991\Ana Che63, 946.pdf](1991/Ana%20Che63,%20946.pdf)

Abstract: Switched wall-jet streams of iodide solutions impinging on AgI-based ion-selective electrodes (ISEs) give potential responses after the first 20 ms. The responses to iodide activity steps of constant ratio a (final)/a(initial) are highly dependent on the starting activity. This is contrary to most present theories of ISE response, particularly those descrbing reversible surface ion exchange controlled by diffusion to a surface or first-order reaction kinetics. Experimentally, diffusion is involved over all concentration ranges but is coupled with some surface adsorption isotherm. At low activities, steps up or down are slower than diffusion because of the need to form or remove some of the adsorbed layer. At high activities, step responses approach pure diffusion control, since adsorption is nearly saturated. Dependence on the starting activity requires a nonlinear adsorption isotherm, which is consistent with adsorption data showing logarithmic dependence of surface ion concentration on bathing activity. Experimentally, rate-controlling dissolution/precipitation processes are not likely.

Keywords: State Membrane Electrodes, Dynamic-Response, Time, Behavior

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Full Text: [A\Ana Che63, 1147.pdf](A/Ana%20Che63,%201147.pdf)

Tong, H.Y., Monson, S.J., Gross, M.L. and Huang, L.Q. (1991), Monobromopolychlorodibenzo-para-dioxins and dibenzofurans in municipal waste incinerator fly-ash. *Analytical Chemistry*, **63** (23), 2697-2705.

Full Text: [A\Ana Che63, 2697.pdf](A/Ana%20Che63,%202697.pdf)

Abstract: Capillary column gas chromatography/high-resolution mass spectrometry was used in two different selected-ion monitoring modes to analyze trace levels of monobromopolychlorodibenzo-p-dioxins and dibenzofurans (BPCDD/Fs) in municipal waster incinerator (MWI) flyash. The mass profile monitoring mode is well-suited for identification of unknown compounds in uncharacterized matrices because it has superior diagnostic capability. Owing to its high sensitivity, conventional peak top monitoring was used to quantify, on the basis of polychlorodibenzo-p-dioxin and dibenzofuran (PCDD/F) standards, the BPCDD/Fs in the sample. The results were compared with those obtained by using two commercial BPCDDs as standards, and the latter results are 4 times greater, indicating the need for appropriate standards. The high certainty and sensitivity obtained from these two mass spectrometric techniques combined with the resolving power of capillary gas chromatography enabled us to compare for the first time the isomer distribution patterns between BPCDD/Fs and their PCDD/F analogues at a high confidence level. The comparison indicates BPCDD/Fs and PCDD/Fs found in MWI flyash are closely related and that many BPCDD/Fs with a 2,3,7,8-substitution configuration may be present in MWI flyash.

Keywords: Ionization Mass-Spectrometry, Human Adipose-Tissue, Gas-Chromatography, Aromatic-Hydrocarbons, Ash, Combustion, 2,3,7,8-Tetrachlorodibenzo-Para-Dioxin, Identification, Dibenzodioxins, Mechanism

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Full Text: [Ana Che64, 151.pdf](Ana%20Che64,%20151.pdf)

Abstract: The advantages and characteristics of mercury-coated carbon-foam composite electrodes for stripping analysis of trace metals are described. The enhanced perimeter-to-area ratios characterizing these composite surfaces offer high preconcentration efficiencies from quiescent solutions. Additional advantages accrue from the lower oxygen-reduction and mercury-oxidation background-current components. Scanning-tunneling and scanning electron microscopies offer valuable insights into the unique microstructure of the mercury film and substrate. Exploratory experiments have shown the dependence of the stripping response upon numerous experimental variables. Convenient quantitation of lead in drinking water is accomplished with quiescent solution and short deposition period. Since neither stirring nor deoxygenation is required, composite-based stripping electrodes should be valuable for field and remote operations.

Keywords: Fiber Electrodes, Voltammetry

Huang, L.Q., Tong, H.Y. and Donnelly, J.R. (1992), Characterization of dibromopolychlorodibenzo-para-dioxins and dibromopolychlorodibenzofurans in municipal waste incinerator fly-ash using gas-chromatography mass-spectrometry. *Analytical Chemistry*, **64** (9), 1034-1040.

Full Text: [A\Ana Che64, 1034.pdf](A/Ana%20Che64,%201034.pdf)

Abstract: Several fly ash samples from different countries were analyzed for dibromopolychlorodibenzo-p-dioxins and-dibenzofurans (DBPCDD/Fs) using capillary column gas chromatography/high-resolution mass spectrometry. Concentrations of these compounds ranged from low to high parts-per-trillion (pptr) depending on the location where the samples were collected. The mass spectrometer, operated at greater than 10000 mass resolution in combination with the high resolving power of capillary column GC, permitted characterization of DBPCDD/Fs in municipal waste incinerator fly ash for the first time. The isomer patterns of tetra-through octa-congener groups of DBPCDD/Fs are remarkably similar regardless of where the fly ash originated, indicating common mechanisms of formation of these compounds in the incinerators.

Keywords: Dibenzo-Para-Dioxins, Brominated Flame Retardants, Polybrominated Dibenzodioxins, Pyrolysis, Furans, Biphenyls, Exchange

Obata, H., Karatani, H. and Nakayama, E. (1993), Automated-determination of iron in seawater by chelating resin concentration and chemiluminescence detection. *Analytical Chemistry*, **65** (11), 1524-1528.

Full Text: [A\Ana Che65, 1524.pdf](A/Ana%20Che65,%201524.pdf)

Abstract: A new automated shipboard analytical method for determining iron(III) in seawater has been developed. The method is based on a combination of selective column extraction using chelating resin and improved chemiluminescence (CL) detection in a closed flowthrough system. In this method, Fe(III) in an acidified sample solution is selectively collected on 8-quinolinol immobilized chelating resin and then eluted with dilute hydrochloric acid. The resulting eluent is mixed with luminol solution, aqueous ammonia, and hydrogen peroxide solution successively, and then the mixture is introduced into the CL cell. The iron concentration is obtained from the CL intensity. The detection limit of iron(III) is 0.05 nmol L-1 when using an 18-mL seawater sample. The method was applied to ordinary oceanic waters and hydrothermal waters collected in the North and South Pacific Oceans.

Keywords: Flow-Injection Analysis, Chemi-Luminescence Detection, Sea-Water, Manganese

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Full Text: [1993\Ana Che65, 1529.pdf](1993/Ana%20Che65,%201529.pdf)

Abstract: Gold-coated screen-printed electrodes offer reliable quantitation of trace lead in connection with potentiometric stripping analysis (PSA). Such replacement of mercury-based sensors, with gold-coated ones, avoids environmental contamination associated with the disposal of mercury electrodes in connection with large-scale screening for lead poisoning. The PSA operation obviates the need for oxygen removal, offers low background contributions, and minimizes surfactant interferences. Changes in the peak intensity and position (vs mercury-coated strips) offer new selectivity dimensions. Various experimental parameters are optimized to allow convenient monitoring of micrograms per liter lead concentrations following short deposition periods. Applicability to urine and drinking water samples is illustrated. The highly stable response of these screen-printed electrodes makes them very attractive for both single-use and multiple applications.

Keywords: Voltammetry

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Full Text: [A\Ana Che66, 3632.pdf](A/Ana%20Che66,%203632.pdf)

Abstract: Cyanobacteria *(Spirulina platensis)* immobilized on controlled pore glass preconcentrate Cu(II), Zn(II), Cd(II), Pb(II), and Fe(III) from aqueous solution with high efficiency as ascertained using an on-line flow injection atomic absorption spectrometry system. The degree of metal binding depends on the pH of the solution. Quantitative retention of copper, zinc, and cadmium occurred at a wide range of pH values, while the retention for lead and iron was pH-dependent. The latter metals were adsorbed strongly only at pH 6 and 7, respectively. The breakthrough capacity was determined from the breakthrough curve, with values of 0.0035, 0.0008, 0.0011, 0.0028, and 0.0017 ng/mL for Cu, Zn, Cd, Pb, and Fe, respectively, being obtained. The analysis of a certified reference sample, sewage sludge of domestic origin (BCR No. 144), for cadmium and copper with a high accuracy ensures the feasibility of this technique for environmental analysis.

Yuchi, A., Sato, T., Morimoto, Y., Mizuno, H. and Wada, H. (1997), Adsorption mechanism of trivalent metal ions on chelating resins containing iminodiacetic acid groups with reference to selectivity. *Analytical Chemistry*, **69** (15), 2941-2944.

Full Text: [A\Ana Che69, 2941.pdf](A/Ana%20Che69,%202941.pdf)

Abstract: The adsorption equilibria of seven trivalent metal ions (M3+, Sc3+, Y3+, La3+, Fe3+, Al3+, Ga3+, and In3+) on chelating resins containing. Iminodiacetic acid groups (-LH2) were studied. Adsorption curves, measured under the conditions of metal ions in excess against chelating groups, directly indicated the metal-to-ligand ratio of the complexes formed in the resin phase. Iron and group 13 metal ions were adsorbed as (-L)2HM, while group 3 metal ions were adsorbed as (-L)3H3M and (-L)2HM. The adsorption constants for (-L)2HM found for all the metal ions were well correlated with the formation constants of iminodiacetate complexes in aqueous solutions. The actual adsorption of group 3 metal ions was significantly enhanced beyond that expected from this correlation because of the formation of (-L)3H3M. This is why the selectivity in the adsorption of trivalent metal ions differs from that in the complexation of iminodiacetate in aqueous solutions. The effects of anions and the number of iminodiacetic acid groups per unit weight of resins were also discussed.

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Full Text: [A\Ana Che70, 1489.pdf](A/Ana%20Che70,%201489.pdf)

Abstract: Metal complexes of the electroactive ligand 9, 10-phenanthroline-5, 6-dione (pdon) are receiving extensive study because of their demonstrated potential as electrocatalysts for the oxidation of NADH and other substrates. In aqueous media, the reduced ligand, 9,10-phenanthroline-5,6-diol (pdol), and its complexes with transition metals are only slightly soluble and tend to accumulate on the surfaces of electrodes, where they are generated by reduction of pdon. The adsorbed (or precipitated) molecular layers can interfere with the continued electroreduction of the more soluble, oxidized precursors from which they are generated. The use of freshly cleaved basal plane pyrolytic graphite electrodes allowed the surface coordination chemistry and electrochemistry of pdon, pdol, and their complexes to be inspected in more detail than in previous studies. The results revealed several general trends: (i) Coordination of pdon to transition metals shifts its reduction potential to more positive values. (II) The affinity of the dipositive form of transition metal redox couples for pdon is greater than that of the tripositive form by a factor that exceeds the corresponding affinities for 9,10-phenanthroline. (III) Pdol and its complexes are much less soluble in aqueous media than are pdon and its complexes. (IV) Complexes of pdon are much less strongly adsorbed on graphite than is the free ligand in both its protonated and unprotonated forms.

Le, X.C. and Ma, M. (1998), Short-column liquid chromatography with hydride generation atomic fluorescence detection for the speciation of arsenic. *Analytical Chemistry*, **70** (9), 1926-1933.

Full Text: [A\Ana Che70, 1926.pdf](A/Ana%20Che70,%201926.pdf)

Abstract: Increasing concerns over human exposure to arsenic and more stringent environmental regulations require rapid determination of trace levels of individual arsenic species, which presents an analytical challenge. We describe a method that is capable of speciating nanogram-per-milliliter levels of arsenite As(III), arsenate As(V), monomethylarsonic acid (MMAA), and dimethylarsinic acid (DMAA) within 3 min. Speciation of two common inorganic species in drinking water, As(III) and As(V), is complete in 1.5 min. The method is based on a combination of fast high-performance liquid chromatography (HPLC) separation of arsenic species on 3-cm HPLC guard columns and the sensitive detection of arsenic hydride by atomic fluorescence spectrometry. Detection limits for the four arsenic species in urine samples are 0.4-0.8 ng/mL. This simple method allows for the direct speciation of arsenic present in natural water samples and in human urine samples from the general population, with no need of any sample pretreatment. Our results from the determination of arsenic species in urine and water standard reference materials are in good agreement with the certified values of total arsenic concentration. The method has been successfully applied to speciation studies of metabolism of arsenosugars following the consumption of arsenosugar-containing mussels by human volunteers. Speciation of arsenic in urine samples collected from four volunteers after the ingestion of musseles reveals significant increases of DMAA concentration, resulting from the metabolism of arsenosugars. These results suggest that the commonly used biomarkers for assessing human exposure to inorganic arsenic, which are based on the determination of urinary arsenite, arsenate, MMAA, and DMAA, are not reliable when arsenosugar-containing seafood is ingested

Pei, J.H., Tercier-Waeber, M.L. and Buffle, J. (2000), Simultaneous determination and speciation of zinc, cadmium, lead, and copper in natural water with minimum handling and artifacts, by voltammetry on a gel-integrated microelectrode array. *Analytical Chemistry*, **72** (1), 161-171.

Full Text: [A\Ana Che72, 161.pdf](A/Ana%20Che72,%20161.pdf)

Abstract: The paper reports a new approach based on a gel-integrated Hg-plated-Ir-based microelectrode array (GIME), for measuring Cu, Pb, Cd, and Zn speciation fin natural waters. This paper focuses on the quantitative discrimination between mobile and colloidal metal species (size limit of a few nanometers), for which most classical separation techniques present severe drawbacks. Previous papers have shown qualitatively that GIME combined with square wave anodic stripping voltammetry (SWASV) has the basic characteristics required to discriminate between these two fractions directly on the unperturbed sample. In addition, because of the large sensitivity provided by GIME, complexation parameters (equilibrium constants and site concentrations) can be determined in little-perturbed samples, particularly without metal addition or with small addition compared with natural concentrations. The advantages of this procedure are exemplified and the possible artifacts occurring when titrating the sample with metals, in particular intermetallic compound formation and other problems, are discussed in detail. The present paper shows that the characteristics of GIME make it a unique tool to get quantitative information on metal speciation at nanomolar or even subnanomolar Bevels, with only minor sample handling.

Keywords: Anodic-Stripping Voltammetry, Situ Profiling System, Heavy-Metals, Samples, Mercury

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Keywords: Articles, Chemistry

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Full Text: [2001\Ana Che73, 370A.pdf](2001/Ana%20Che73,%20370A.pdf)

Keywords: Database Tomography, Fish-Oil, Science, Bibliometrics, Management, Discovery, Raynauds

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Full Text: [2001\Ana Che73, 667A.pdf](2001/Ana%20Che73,%20667A.pdf)

Yan, X.P., Yin, X.B., He, X.W. and Jiang, Y. (2002), Flow injection on-line sorption preconcentration coupled with hydride generation atomic fluorescence spectrometry for determination of (Ultra)trace amounts of Arsenic(III) and Arsenic(V) in natural water samples. *Analytical Chemistry*, **74** (9), 2162-2166.

Full Text: [A\Ana Che74, 2162.pdf](A/Ana%20Che74,%202162.pdf)

Abstract: A flow injection on-line sorption preconcentration and separation in a knotted reactor (KR) was coupled to hydride generation atomic fluorescence spectrometry (HG-AFS) for speciation of inorganic arsenic in natural water samples. The method involved on-line formation of the As(III)-pyrrolidinedithiocarbamate (PDC) complex over a sample acidity of 0.001-0.1 mol L-1 HCl, its adsorption onto the inner walls of the K-R made from 150-cm long x 0.5-mm i.d. PTFE tubing, elution with 1 mol U L-1 HCl, and detection by HG-AFS. Total inorganic arsenic was determined after prereduction of As(V) to As(III) with 1% m/v L-cysteine. The concentration of As(V) was calculated by the difference of the total inorganic arsenic and As(III). A 1 mol L-1 concentration of HCl was employed not only as the efficient eluent but also as the required medium for subsequent hydride generation. Potential factors that affect adsorption, rinsing, elution, and hydride generation were investigated in detail. The low cost, easy operation, and high sensitivity are the obvious advantages of the present system. The consumption of a 6 mL sample solution, an enhancement factor of 11 and a detection limit (3s) of 0.023 μg L-1 As(III) were obtained at a sample throughput of 32 h-1. The precision for 14 replicate measurements of 1 μg L-1 As(III) was 1.3% (RSD). The recoveries from natural water samples varied from 96.7 to 105% for 2 μg L-1 of As(III) spike and from 97.1 to 107% for 2 μg L-1 of As(V) spike. The analytical results obtained by the present method for total arsenic in the certified reference materials, SLRS-4 (river water) and NASS-5 (seawater), agreed well with the certified values. The developed method was also successfully applied to the speciation of inorganic arsenic in local natural water samples.

Keywords: Absorption Spectrometry, Knotted Reactor, Affected People, Drinking-Water, Ground-Water, 6 Districts, West-Bengal, Separation, Calamity, India

Braun, T., Schubert, A. and Schubert, G. (2002), Mapping the world of analytical chemistry. *Analytical Chemistry*, **74** (17), 477A-479A.

Full Text: [2002\Ana Che74, 477A.pdf](2002/Ana%20Che74,%20477A.pdf)

? Liu, G.H., Zhu, Y.F., Zhang, X.R. and Xu, B.Q. (2002), Chemiluminescence determination of chlorinated volatile organic compounds by conversion on nanometer TiO2. *Analytical Chemistry*, **74** (24), 6279-6284.

Full Text: [A\Ana Che74, 6279.pdf](A/Ana%20Che74,%206279.pdf)

Abstract: A novel method based on conversion of chlorinated volatile organic compounds (CVOCs) to chlorine using a new type of column packed with nanometer TiO2 coupled with chemiluminescence (CL) has been developed for determination of them in workplace air. CVOCs are converted to chlorine by nanometer TiO2 at 220 degreesC. The Cl2 that is produced is selectively enriched on the column and subsequently released from the column at 600 degreesC. The Cl2 that is released is determined using a postcolumn CL detector. The CL intensity was linear with CCl4 in the range of 0.1-380 ppm, and the detection limit was 40 ppb (S/N = 3). Higher sensitivity could be acquired by using a larger volume of enrichment. A similar procedure could be used for the determination of other CVOCs. CL intensities of CH2Cl2, CHCl3, and CCl4 at the same concentration increased in the order CH2Cl2 < CHCl3 < CCl4. The method has been successfully applied to the determination of CCl4 in workplace air, where 0.15-150 ppm CCl4 would be detected. The possible mechanism for the long lifetime of the column packed with nanometer TiO2 was tested using Raman spectrometer, X-ray powder diffraction, transmission electron microscopy and X-ray photoelectron spectroscopy. The results showed that the column packed with nanometer TiO2 could be operated in the reversible mode for determination of CVOCs under the present conditions. The method would be potentially applied to the analysis of other chlorinated compounds in environment, such as persistent organic pollutants.

Keywords: Solid-Phase Extraction, Heavy-Metal Ions, Destructive Adsorption, Carbon-Tetrachloride, Preconcentration, Particles, Elements, Dioxide, Anatase, Oxides

Notes: highly cited

? Cai, Y.Q., Jiang, G.B., Liu, J.F. and Zhou, Q.X. (2003), Multiwalled carbon nanotubes as a solid-phase extraction adsorbent for the determination of bisphenol a, 4-n-nonylphenol, and 4-tert-octylphenol. *Analytical Chemistry*, **75** (10), 2517-2521.

Full Text: [2003\Ana Che75, 2517.pdf](2003/Ana%20Che75,%202517.pdf)

Abstract: The adsorptive potential of multiwalled carbon nanotubes (MWNTs) for solid-phase extraction of bisphenol A, 4-n-nonylphenol, and 4-tert-octylphenol was investigated for the first time. The three analytes are quantitatively adsorbed on a MWNTs-packed cartridge, then the analytes retained on the cartridge are quantitatively desorbed with suitable amounts of methanol. Finally, the analytes in the methanol eluate are determined by high performance liquid chromatography-fluoromebric detection. Parameters influencing the extraction efficiency, such as volume of the sample solutions, pH of the sample, and the eluent volume, were examined. Comparative studies showed that MWNTs were superior to C-18 for the extraction of the more polar analyte bisphenol A and at least as effective as C-18 for the extraction of 4-n-nonylphenol and 4-tert-octylphenol. Compared to XAD-2 copolymer, WNTs exhibited a better property for the extraction of all three analytes. The developed method has been applied to determine bisphenol A, 4-n-nonylphenol, and 4-tert-octylphenol in several environmental water samples. The accuracy of the proposed method was tested by recovery measurements on spiked samples, and good recovery results (89.8-104.2%) were obtained. Detection limits of 0.083, 0.024, and 0.018 ng mL(-1) for bisphenol A, 4-n-nonylphenol, and 4-tert-octylphenol, respectively, were achieved under the optimized conditions.

Keywords: Environmental Waters, Multiresidue Method, Pesticide Traces, Drinking-Water, Preconcentration, Fullerene, Sorption, Level, Chromatography, Chlorophenols

Notes: highly cited

? Fang, G.Z., Tan, J. and Yan, X.P. (2005), An ion-imprinted functionalized silica gel sorbent prepared by a surface imprinting technique combined with a sol-gel process for selective solid-phase extraction of cadmium(II). *Analytical Chemistry*, **77** (6), 1734-1739.

Full Text: [2005\Ana Che77, 1734.pdf](2005/Ana%20Che77,%201734.pdf)

Abstract: A new ion-imprinted thiol-functionalized silica gel sorbent was synthesized by a surface imprinting technique in combination with a sol-gel process for selective on-line, solid-phase extraction of Cd(II). The Cd(II)-imprinted thiol-functionalized silica sorbent was characterized by FT-IR, the static adsorption-desorption experiment, and the dynamic adsorption-desorption method. The maximum static adsorption capacity of the ion-imprinted functionalized sorbent was 284 mu mol g(-1). The largest selectivity coefficient for Cd(II) in the presence of Pb(II) was over 220. The static uptake capacity and selectivity coefficient of the ion-imprinted functionalized sorbent are higher than those of the nonimprinted sorbent. The breakthrough capacity and dynamic capacity of the imprinted functionalized silica gel sorbent for 4 mg L-1 of Cd(II) at 5.2 mL min(-1) of sample flow rate were 11.7 and 64.3 mu mol g(-1), respectively. No remarkable effect of sample flow rate on the dynamic capacity was observed as the sample flow rate increased from 1.7 to 6.8 mL min(-1). The imprinted functionalized silica gel sorbent offered a fast kinetics for the adsorption and desorption of Cd(II). The prepared ion-imprinted functionalized sorbent was shown to be promising for on-line, solid-phase extraction coupled with flame atomic absorption spectrometry for the determination of trace cadmium in environmental and biological samples. All competitive ions studied did not interfere with the determination of Cd(II). With a sample loading flow rate of 8.8 mL min(-1) for 45-s preconcentration, an enhancement factor of 56, and a detection limit (3 sigma) of 0.07 mu g L-1 were achieved at a sampling frequency of 55 h(-1). The precision (RSD) for 11 replicate on-line sorbent extractions of 8 mu g L-1 Cd(II) was 0.9%. The sorbent also offered good linearity (r = 0.9997) for on-line, solid-phase extraction of trace Cd(II).

Keywords: Mercury

? Weiss, S. and Reemtsma, T. (2005), Determination of benzotriazole corrosion inhibitors from aqueous environmental samples by liquid chromatography-electrospray ionization-tandem mass spectrometry. *Analytical Chemistry*, **77** (22), 7415-7420.

Full Text: [2005\Ana Che77, 7415.pdf](2005/Ana%20Che77,%207415.pdf)

Abstract: The first method for the determination of commonly used corrosion inhibitors in environmental water samples by liquid chromatography-electrospray ionization-tandem mass spectrometry is presented. Benzotriazole (BTri) and the two isomers of tolyltriazole (5- and 4-TTri) are separated in an isocratic run. By gradient elution, BTri, 4-TTri, 5-TTri, and xylyltriazole can be determined simultaneously with three benzothiazoles, but here TTri isomers coelute. The instrumental detection limit of 2 pg allows the determination of the three most important benzotriazoles from municipal wastewater and most surface waters by direct injection into the HPLC system without previous enrichment. When solid-phase extraction is employed with mean recovery rates of 95-113%, the limit of quantification for benzotriazoles range from 10 ng/L in groundwater to 25 ng/L in untreated wastewater. BTri and TTri were determined in municipal wastewater in microgram per liter concentrations. Elimination in wastewater treatment appears to be poor, and BTri and TTri can be followed through a water cycle from treated municipal wastewater through surface water to bank filtrate used for drinking water production. The TTri isomers show markedly different biodegradation behavior with 4-TTri being more stable.

Keywords: Waste-Water Contaminants, Aircraft Deicing Fluid, Benzothiazoles, Fate, Pharmaceuticals, Toxicity

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Full Text: [2007\Ana Che79, 5343.pdf](2007/Ana%20Che79,%205343.pdf)

Abstract: Two-dimensional (2D) simulation of capillary electrophoresis is developed to model affinity interaction and wall adsorption simultaneously. Finite difference schemes are used to evaluate the mass-transfer equation in cylindrical coordinates. A Langmuir second-order kinetic law is applied to regulate the wall adsorption and desorption processes. Contributions from the simulation parameters are investigated extensively, and parameters for accurate and efficient simulation are identified. With the 2D model, capillary zone electrophoresis and affinity capillary electrophoresis (ACE) in the presence of strong or weak wall adsorption are simulated to elucidate peak distortions. Finite sample injection length/amount and wall adsorption that lead to systematic errors in the estimated binding constants in ACE are quantified for the first time with both actual experiments and computer simulation. Methods for correcting the estimated binding constants are proposed to extend the usefulness of ACE.

Keywords: 2 Co-Ions, Adsorption, Adsorption And Desorption, Adsorption and Desorption Processes, Affinity, Analysis, Background Electrolytes, Binding, Binding Constants, Capillary Electrophoresis, Capillary Zone Electrophoresis, Computer Simulation, Constants, Desorption, Desorption Processes, Electromigration, Electrophoresis, Errors, Injection, Interaction, Kinetic, Langmuir, Law, Lead, Mass Transfer, Mass-Transfer, Mathematical-Model, Model, Monte-Carlo-Simulation, Numerical-Simulation, Parameters, Peak Dispersion, Rectangular Hyperbolae, Second Order, Simulation, Systematic Errors, Time, Zone-Electrophoresis

# Title: Analytical Letters

Full Journal Title: [Analytical Letters](http://weblinks2.epnet.com/authHjafDetail.asp?tb=1&_ua=bo+B%5F+db+aphjnh+bt+TD++%22I3D%22+8B5A&_ug=sid+261C2A2F%2DA9D9%2D4324%2D920A%2D66A2C0906496%40sessionmgr2+dbs+aph+0F44&_us=hd+False+sm+ES+1C03&_uso=st%5B0+%2DTD++%22I3D%22+tg%5B0+%2D+db%5B0+%2Daph+op%25); [Analytical Letters](http://www.informaworld.com/smpp/455858730-59443481/title~db=all~content=t713597227)

ISO Abbreviated Title: Anal. Lett.

JCR Abbreviated Title: Anal Lett

ISSN: 0003-2719

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Journal Country/Territory: United States

Language: Multi-Language

Publisher: Marcel Dekker Inc

Publisher Address: 270 Madison Ave, New York, NY 10016

Subject Categories:

Chemistry, Analytical: Impact Factor 0.968, / (2000)

? Fagioli, F., Locatelli, C., Lanciotti, E., Vallone, G., Mazzotta, D. and Mugelli, A. (1988), Determination of barium in bottled drinking-water by graphite-furnace atomic absorption spectrometry. *Analytical Letters*, **21** (11), 2107-2116.

Full Text: [1988\Ana Let21, 2107.pdf](1988/Ana%20Let21,%202107.pdf)

Abstract: In relation to the wide environmental spread of barium and to its cardiovascular effects, barium levels were determined by graphite furnace atomic absorption spectrometry in 60 different brands of bottled water marketed in Italy. Matrix interferences were investigated in order to evaluate the use of an analytical calibration function rather than the much more time consuming addition technique. The barium content ranged from limit of detection CL (7.0 μg/l) up to 660 μg/l, the median value being 80 μg/l, while the recovery tests varied between 90 and 110 % and the precision of the method (syx) was 2.5 %.

Keywords: Barium, Drinking Water, Atomic Absorption Spectrometry

Haj-Hussein, A.T. (1996), Ultraviolet determination of chloride in water by flow injection analysis. *Analytical Letters*, **29** (5), 793-806.

Full Text: [1996\Ana Let29, 793.pdf](1996/Ana%20Let29,%20793.pdf)

Abstract: A flow injection method (FIA) has been developed for the determination of chloride with Hg-EDTA complex as reagent. Spectrophotometric detection in the ultraviolet region at 250 nm was used for measuring the absorbance of [HgYCI]3- complex ion, where H4Y is EDTA. A manifold consisting of two lines was used. The EDTA carrier and the Hg-EDTA reagent streams were buffered at pH 4.6 (Acetate buffer). This UV-FIA method has a detection limit of 0.2 ppm chloride. At a sampling rate of 60 samples per hour, with 50 µl sample injections, high reproducibility of measurements was achieved, with about 1% relative standard deviation. The method was used for the determination of chloride in natural waters and potable water supplies. The effects of sample volume, flow rate, coil length, and possible interferences on the FIA spectrophotometric signals were reported.

Keywords: Flow Injection Analysis, Chloride Determination, Water, Ultraviolet Spectrophotometry

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Full Text: [1996\Ana Let29, 2071.pdf](1996/Ana%20Let29,%202071.pdf)

Abstract: A (-)-nicotine-selective polymer was prepared by molecular imprinting technique using methacrylic acid as a functional monomer. Liquid-chromatographic tests, using the polymers as a stationary phase, exhibited that the basicity of the functional group of (-)-nicotine is crucial for rebinding by the molecularly imprinted polymer. Scatchard analysis implied that the binding sites generated within the polymer are heterogeneous in terms of affinity, and the apparent dissociation constant of the highest affinity binding sites was estimated as 3.7 μM.

Keywords: Molecular Imprinting, Nicotine, Liquid Chromatography, Polymer, Network Polymers, Recognition, Atrazine, Binding, Separations, Derivatives, Mimics, Sites, Assay

Soylak, M., Narin, I. and Dogan, M. (1997), Trace enrichment and atomic absorption spectrometric determination of lead, copper, cadmium and nickel in drinking water samples by use of an activated carbon column. *Analytical Letters*, **30** (15), 2801-2810.

Full Text: [1997\Ana Let30, 2801.pdf](1997/Ana%20Let30,%202801.pdf)

Abstract: A simple method for atomic absorption spectrometric determination of lead copper, cadmium and nickel in drinking water samples after preconcentration by sorbing 1-(2-pyridylazo) 2-naphthol (PAN) complex of these metals on an activated carbon column has been established. The metal/PAN complexes were quantitatively retained on the activated carbon in the pH range 6-8. Metals retained on the activated carbon column were completely eluted with 2M HCl in acetone. This method was applied to the determination of lead, copper, cadmium and nickel in drinking water samples and good results were obtained (Recoveries >95%, relative standard deviations <7%, relative error <3%).

Keywords: Activated Carbon Column, Copper, Lead, Cadmium, Nickel, 1-(2-Pyridylazo) 2-Naphthol, Flame AAS, Spectrophotometric Determination, Online Preconcentration, Solvent-Extraction, Heavy-Metals, Separation, Graphite, Coprecipitation, Adsorption, Seawater, Elements

? Cano Paón, J.M., Garcí De Torres, A. and Vereda Alonso, E. (2001), Analytical chemistry in Spain in recent years and at present. *Analytical Letters*, **34** (2), 177-183.

Full Text: [2001\Ana Let34, 177.pdf](2001/Ana%20Let34,%20177.pdf)

Abstract: This paper analyses in depth the situation of Spanish analytical chemistry in recent years (particularly the 1990–1999 period). The analysis is preceded by an overview of Spanish scientific research in the period studied, which is followed by a bibliometric study and a review of the work of the most prominent current analytical research groups.

Keywords: Analytical Chemistry, Bibliometric, Bibliometric Study, Chemistry, Research, Scientific Research, Spain

? Arvand, M., Latify, L., Tajmehri, H., Yagubov, A.I., Nuriyev, A.N., Pourhabib, A., Mousavi, S.J. and Abolhassani, M.R. (2009), Comparative study for the removal of oxadiazon from aqueous solutions by adsorption on chitosan and activated carbon. *Analytical Letters*, **42** (6), 856-869.

Full Text: [2009\Ana Let42, 856.pdf](2009/Ana%20Let42,%20856.pdf)

Abstract: In the present investigation, chitosan and activated carbon are used as adsorbents for the removal of oxadiazon from aqueous solutions. The analyzing system was a gas chromatograph equipped with mass selective detector. The equilibrium studies are systematically carried out in a batch process, covering various process parameters that include agitation time, adsorbent dosage, and pH of the aqueous solution. Also, the relationship between extraction of oxadiazon and volume of aqueous/organic phase as well as the effect of inorganic salt were investigated. Adsorption behavior was found to follow Freundlich and Langmuir isotherms. The adsorption mechanism is described by a pseudo-second-order kinetics.

Keywords: Activated Carbon, Biosorbents, Chitosan, Chromatography-Mass-Spectrometry, Chromium, Gas-Chromatography, Herbicides, Herbicides, Juice, Oxadiazon, Residues, Solid-Phase Extraction

# Title: Analytical Proceedings

Full Journal Title: [Analytical Proceedings](http://www.rsc.org/Publishing/Journals/AP/article.asp); [Analytical Proceedings](http://www.rsc.org/Publishing/Journals/AI/Index.asp)

ISO Abbreviated Title: Anal. Proc.

JCR Abbreviated Title: Anal Proc

ISSN: 0144-557X

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Royal Soc Chemistry

Publisher Address:

Subject Categories:

: Impact Factor (2000)

McKay, G. and Otterbum, M.S. (1980), Removal of dyes from water using adsorption techniques. *Analytical Proceedings*, **17**, 406-409.

Full Text: [1960-80\Ana Pro17, 406.pdf](1960-80/Ana%20Pro17,%20406.pdf)

? McKay, G., Otterbum, M.S., Ure, A.M., Harper, D.B., Glockling, F., Cuthbertson, A., Robinson, E., Cooke, J.D. and Parker, J.G. (1980), Inorganic and organic pollutants in the troposphere and natural waters. *Analytical Proceedings*, **17** (10), 406-432.

Full Text: [1960-80\Ana Pro17, 406.pdf](1960-80/Ana%20Pro17,%20406.pdf)

? Schubert, A. and Maczelka, H. (1994), All quiet on the eastern front? Analysis of the publication, reference and citation patterns of *Zhurnal Analiticheskoy Khimii*, 1990-91 versus 1980-81. *Analytical Proceedings*, **31** (4), 141-144.

Full Text: [1994\Ana Pro31, 141.pdf](1994/Ana%20Pro31,%20141.pdf)

Abstract: Reflections of the dramatic political, social, and economic changes of the eighties in the former USSR were sought for in the publication, reference, and citation patterns of one of the leading scientific journals of the country, Zhurnal Analiticheskoy Khimii. It was found that, although no spectacular changes in the main scientometric indicators and the underlying publication, reference, and citation patterns could be observed, the journal had definitely lost impact due to an inevitable ‘dilution’ of publications. This effect seems to be the consequence of the ‘opening’ of the scientific community to foreign journals and the apparent lack of a sufficient strategy for Zh. Anal. Khim. to match its competitors successfully.

Keywords: Citation, Citation Patterns, Impact, Indicators, Journals, Publication, Publications, Scientific Journals, Scientometric Indicators

Nickson, R.A., Hill, S.J. and Worsfold, P.J. (1995), Solid phase techniques for the preconcentration of trace metals from natural waters. *Analytical Proceedings*, **32** (9), 387-395.

Full Text: [1995\Ana Pro32, 387.pdf](1995/Ana%20Pro32,%20387.pdf)

Abstract: The preconcentration of trace metals is often necessary for their determination in natural waters, Solid phase techniques are now widely used for this purpose, either in an off-line batch mode or, increasingly commonly, in an on-line capacity in conjunction with flow injection analysis. Trace metals are typically preconcentrated on-line by injection of microlitre to millilitre sample volumes into a suitable buffered carrier stream and are eluted to the detector by injection of a smaller volume of eluting material, most commonly a mineral acid. This review classifies the various solid phases used (iminodiacetate, quinolin-8-ol, dithiocarbamate and others) and tabulates the applications in terms of analyte, sample matrix, solid phase, detection system and reported detection limits. Alternative approaches, such as the use of immobilized algae, are also reported.

Keywords: Atomic-Absorption Spectrometry, Plasma-Mass-Spectrometry, Flow-Injection Analysis, Chelation Ion Chromatography, Online Preconcentration, Sea-Water, Emission-Spectrometry, Column Preconcentration, Silica-Gel, Sample Preconcentration

# Title: Analytical and Quantitative Cytology and Histology

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Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Montironi, R. and Mazzucchelli, R. (2007), Analytical and quantitative cytology and histology - Reflection on the past 2 years. *Analytical and Quantitative Cytology and Histology*, **29** (3), 123-127.

Keywords: Cytology, Histology

# Title: Analytical Sciences

Full Journal Title: [Analytical Sciences](http://www.jsac.or.jp/cgi-bin/analsci/toc/)

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Language: English

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Publisher Address: 26-2 Nishigotanda 1 Chome Shinagawa-Ku, Tokyo 141, Japan

Subject Categories:

Chemistry, Analytical: Impact Factor (2000)

? Nakajima, Y. and Yoshida, I. (1996), Adsorption and concentration of ammonia in water with copper zirconium phosphate metal. *Analytical Sciences*, **12** (1), 125-127.

Full Text: [1996\Ana Sci12, 125.pdf](1996/Ana%20Sci12,%20125.pdf)

Keywords: Copper Zirconium Phosphate, Adsorption, Ammonia, Simple Preconcentration, Exchange, Ion

? Yano, M. and Inoue, K. (1997), Adsorption of metal ions on alginic acid amide, pectic acid amide, crosslinked pectic acid and crosslinked alginic acid. *Analytical Sciences*, **13** (S), 359-360.

Full Text: [1997\Ana Sci13, 359.pdf](1997/Ana%20Sci13,%20359.pdf)

Abstract: Adsorption of Pb(II), Cu(II) and Zn(II) on crosslinked or amidated pectic acid and alginic acid were examined. Adsorption experiments were carried out by the conventinal batch-method at 30°C from aqueous buffer solutions consisting of 0.1 moldm-3 HNO3 and 0.1 moldm-3 HEPES. The order of adsorption was found to be as follows for all adsorbents; Pb(II)>Cu(II)>Zn(II). It was found that separation property of alginic acid amide for Pb(II) away from Cu(II) and Zn(II) was the most excellent among 4 adsorbent tested. Nearly complete separation can be achieved for Pb(II) away from Zn(II) at pH less than 3.9 with alginic acid amide.

Gao, Y.H., Lee, K.H., Oshima, M. and Motomizu, S. (2000), Adsorption behavior of metal ions on cross-linked chitosan and the determination of oxoanions after pretreatment with a chitosan column. *Analytical Sciences*, **16** (12), 1303-1308.

Full Text: [A\Ana Sci16, 1303.pdf](A/Ana%20Sci16,%201303.pdf)

Abstract: The adsorption behavior of 60 elements at the 10 ng ml-1 level on high-porous cross-linked chitosan in a packed minicolumn was systematically examined. The chitosan used could adsorb anionic species quantitatively as oxoanions or chloro complex anions of metals, such as Ti, V, Mo, W, Ga, Bi, Au(W), Pt(TV) and Pd(II), in sample solutions by an ion-exchange mechanism, and could adsorb some metal ions by a chelating mechanism. Most of the metal ions adsorbed on the chitosan were eluted with 1 M nitric acid, and other noble metals, such as Au, Pt and Pd, were eluted by a solution containing 1 M hydrochloric acid and 0.05 M thiourea. The adsorption fraction of metal ions was investigated by measuring metal ions in eluates by ICP-MS. By using the proposed column pretreatment method, metal ions present as their oxoanions in river-water samples, such as Ti, V, Mo, W, Ga and Bi, were collected on the cross-linked chitosan, eluted and determined. The method was applied to an analysis of reference materials distributed by the Japan Society for Analytical Chemistry: JAC 0031 and JAC 0032. The analytical results agreed closely with other reference values.

Keywords: Trace-Elements, Cupric Ion, Water, Preconcentration, Crosslinking, Cadmium, Chitin

? Nakajima, A., Ohe, K., Baba, Y. and Kijima, T. (2003), Mechanism of gold adsorption by persimmon tannin gel. *Analytical Sciences*, **19** (7), 1075-1077.

Full Text: [2003\Ana Sci19, 1075.pdf](2003/Ana%20Sci19,%201075.pdf)

Abstract: Gold adsorption by persimmon tannin (PT) gel from a solution containing hydrogen tetrachloroaurate(III) was examined. A flow-rate examination in a column system indicated the reduction of Au(III) ion to Au(0). XRD patterns clarified the existence of Au(0) on the gel which adsorbed gold. The gel could also adsorb colloidal Au(0) prepared independently. A model consisting of ligand exchange, Au(III) reduction to Au(0), and resulting Au(0) adsorption by PT gel was presented for the gold adsorption mechanism.

Keywords: Accumulation, Recovery, Biomass, Removal, Anion, Ions

? Ghazy, S.E., Samra, S.E., Mahdy, A.E.M. and El-Morsy, S.M. (2006), Removal of aluminum from some water samples by sorptive-flotation using powdered modified activated carbon as a sorbent and oleic acid as a surfactant. *Analytical Sciences*, **22** (3), 377-382.

Full Text: [2006\Ana Sci22, 377.pdf](2006/Ana%20Sci22,%20377.pdf)

Abstract: Bench-scale experiments were conducted in the laboratory, aiming to remove aluminum from water. They were based on using powdered activated carbon (PAC), which was prepared from olive stones generated as plant wastes and modified with an aqueous oxidizing agent as HNO3 as an effective sorbent and oleic acid (HOL) as a surfactant. The main parameters (namely: initial solution pHs, sorbent, surfactant and aluminum concentrations, shaking time, ionic strength and the presence of foreign ions) that influence the sorptive-flotation process were examined. Good results were obtained under the optimum conditions, according to which nearly 100% of aluminum, at pH 7 and at room temperature (similar to 25°C), was removed. The procedure was successfully applied to recover aluminum spiked to some natural water samples. Moreover, a sorption and flotation mechanism is suggested.

Keywords: Aqueous-Solutions, Natural-Waters, Separation, Waste, Preconcentration, Copper(II), Chromium, Fines

? Soliman, E.M. and Ahmed, S.A. (2010), Solid-phase extractors based on 8-aminoquinoline and 2-aminopyridine covalently bonded to silica gel for the selective separation and determination of calcium in natural water and pharmaceutical samples. *Analytical Sciences*, **26** (4), 473-478.

Full Text: [2010\Ana Sci26, 473.pdf](2010/Ana%20Sci26,%20473.pdf)

Abstract: Two new silica-gel phases were produced directly via the chemical interaction of 3-chloropropyltrimethoxysilane modified silica gel with 8-aminoquioline, phase 1 and 2-aminopyridine, phase II under reflux conditions. The selectivity properties exhibited by the phases under investigation for the uptake of Ca(II), Mg(II), Fe(III), Co(II), Ni(II), Cu(II), Zn(II), Cd(II) and Pb(II) were determined at different pH values and shaking times under static conditions. The immobilization process and binding of metal ions to the phases were proved via infrared spectra. The phases showed high performance towards Ca(II) extraction at pH 10.00. The equilibrium data were better fitted with a Langmuir model (r(2) = 0.985). The adsorption kinetics data were best fitted with the pseudo-second-order type. Good validation was obtained on applications of the two phases for the separation and determination of Ca(II) in natural water and pharmaceutical samples with no matrix interferences at pH 10.00 under dynamic conditions prior to determination by AAS.

Keywords: Activated Carbon, Adsorption, Adsorption Kinetics, Aqueous-Solutions, Atomic-Absorption-Spectrometry, Binding, Calcium, Cation-Exchange Chromatography, Cd(II), Chemical, Co(II), Cu(II), Data, Dynamic, Equilibrium, Extraction, Fe(III), Gel, Heavy-Metal Ions, Hydrochloric-Acid, Immobilization, Interaction, Interferences, Investigation, Ions, Kinetics, Langmuir, Langmuir Model, Matrix, Metal, Metal Ions, Model, Modified, Natural, Ni(II), Pb(II), Performance, pH, Phase II, Pseudo Second Order, Pseudo-Second-Order, Quantitative Separation, Selectivity, Separation, Silica, Silica Gel, Silicagel, Solvent-Extraction, Spectrophotometric Determination, Stationary-Phase, Uptake, Validation, Water, Zn(II)

# Title: Anatomical Record

Full Journal Title: [Anatomical Record](http://www3.interscience.wiley.com/cgi-bin/jtoc?ID=28243)

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Subject Categories:

Anatomy & Morphology: Impact Factor (2000)

Tarpley, R.J., Hillmann, D.J., Henk, W.G. and George, J.C. (1997), Observations on the external morphology and vasculature of a fetal heart of the bowhead whale, Balaena mysticetus. *Anatomical Record*, **247** (4), 556-581.

Full Text: [A\Ana Rec247, 556.pdf](A/Ana%20Rec247,%20556.pdf)

Abstract: BACKGROUND: Specialized demands within the aquatic environment for over some 60 million years have shaped unique morphological expressions in the whales, dolphins, and porpoises (Cetacea). Detailed consideration of these features, particularly in the great whales, has often been constrained by difficulties in securing adequate specimens for study. We had the opportunity to examine external heart morphology in a rarely obtained and prepared specimen from the bowhead whale, Balaena mysticetus.

METHODS: The external morphology and in situ relations of a formalin-perfused heart were examined grossly in a near-term bowhead fetus. Latex injections assisted visualization of coronary vasculature. Magnetic resonance imaging was used to clarify heart positioning within the thoracic cavity in two younger (early and mid-gestational) intact fetuses.

RESULTS: The heart was globular in form, with a blunt apex and wide base; it was laterally broad relative to height yet considerably compressed between nearly planar atrial (diaphragmatic) and auricular (sternocostal) surfaces. The heart constituted 0.01 of body mass in the near-term fetus. Within the thoracic cavity, the heart tilted forward on its long axis, placing the great basal vessels in the region of the thoracic inlet. The aorta extended forward from mid-base in parallel with the pulmonary trunk, arched sharply to the left, producing in succession the brachiocephalic trunk, left common carotid artery, and the left subclavian artery. Bifurcation of the brachiocephalic trunk yielded the right common carotid and right subclavian arteries. The distal portion of the aortic arch was linked to the pulmonary trunk via the ductus arteriosus. The aorta then swung caudally over the heart base, descending beneath the bodies of the thoracic vertebrae. The ascending aorta featured three bulbous sinuses immediately distal to the three semilunar cusps of the aortic valve. Originating along the distal boundaries of the left and right sinuses were the left and right coronary arteries. The arteries were similar in size and, because each sent contributions along their respective coronary and interventricular grooves, the heart can be described as bilateral relative to arterial supply. Anastomoses were common within and between the two arteries. Venous return from the heart was comprised of the great, middle, and right cardiac veins, all three converging in the coronary sinus. The right cardiac vein also included tributaries that emptied directly into the right atrium.

CONCLUSIONS: External heart morphology in the fetal bowhead whale examined was distinguished by a laterally broad conformation with significant compression between its cranial and caudal surfaces. Aortic bulb configuration in combination with an expandable aortic arch may support blood service to the heart during diastole. Vascular service to the heart featured a complex vessel network with extensive intraarterial and intravenous anastomoses that enable many alternate blood perfusion pathways and may be adaptive to water-column-pressure fluctuations experienced by a large diving mammal.

Keywords: Cetacea, Balaena Mysticetus, Bowhead Whale, Heart Morphology, Coronary Vasculature

# Title: Anesthesia and Analgesia

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Full Text: [1995\Ane Ana80, 641.pdf](1995/Ane%20Ana80,%20641.pdf)

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Full Text: [1996\Ane Ana82, 221.pdf](1996/Ane%20Ana82,%20221.pdf)

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Full Text: [1999\Ane Ana88, 1175.pdf](1999/Ane%20Ana88,%201175.pdf)

Abstract: Using a MEDLINE-based analysis, we studied the national origin of articles published in important anesthesia, pain, critical care, and emergency medicine journals. All journals in English listed in the Science Citation Index (SCI) of Journal Citation Reports under the subheadings Anesthesiology (*n* = 17) and Emergency Medicine & Critical Care (*n* = 13) were analyzed with the help of MEDLINE. Issues from 1996 and 1997 were included and summarized. Letters, abstracts, editorials, meeting reports, and news were not included. MEDLINE printouts were studied, and we classified the country of origin of the first author. The following subsets were defined: Anesthesia, Regional Anesthesia and Pain, Clinical Monitoring and Computing, Intensive Care Medicine and Resuscitation, and Emergency Medicine and Trauma. A total of 10, 643 publications in 30 journals were published during 1996 and 1997. of the 30 journals, 17 originate in the United States (US) and 8 from United Kingdom (UK). In 14 of the 17 US journals, >50% of the publications came from the US. The US was the most active nation, with a total of 4, 283 articles (40.2% of all contributions), followed by the UK with 1, 418 articles (13.3%). When looking at the number of publications with regard to inhabitants or impact factor per million inhabitants, small highly industrialized nations (Finland 35.41 and Sweden 33.9 articles/million inhabitants) were significantly more active than large highly industrialized countries (US 16.2, Germany 6.1, Japan 4.5 articles/million inhabitants). It is presumed that indicators of productivity in medical research are the number of articles published and the cumulative impact factor. During 1996 and 1997, the US was the most active nation with regard to publications in important journals in the areas of anesthesia, pain, critical care, and emergency medicine. Small highly industrialized nations, however, had a higher activity rate than larger countries.

Implications: In a MEDLINE-based analysis, we examined the number of publications in important anesthesia, pain, critical care, and emergency medicine journals (*n* = 30) for the years 1996 and 1997 and analyzed these with regard to national origin. The United States was by far the most active nation in this medical area (4283 articles [40.2%]), followed by the United Kingdom (13.3%). With regard to publications per million inhabitants, small highly industrialized nations contributed overproportionally to publications in this area.

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Full Text: [1999\Ane Ana89, 520.pdf](1999/Ane%20Ana89,%20520.pdf)

Abstract: We studied the relative quality of a subset of anesthesiology and critical care medicine Internet mailing lists regarding the publishing capacity of their members to compare them with the major journals and conferences regarding these specialties. Using systematic searches on MEDLINE and according to the Science Citation Index 1995, we investigated the impact factor of mailing list subscribers, of the first authors of the selected articles, and of the first authors of published abstracts from conferences. We studied six mailing lists, seven journals, and four conferences. Journals and conferences showed a higher percentage of published authors and higher average impact factor among their first authors than the mailing Lists did per subscriber. However, when only the subset of publishing authors from the three media was considered, no significant differences were found. We conclude that qualified authors may be found among the subscribers of Internet medical mailing Lists on anesthesiology and critical care medicine. These professional discussion groups could complement peer-reviewed publications and conferences in professional information exchange and continuing medical education. Implications: Internet publishing is not governed by rules that assure certain basic quality standards. Methods for assessing these standards are needed. We compared discussion groups with medical journals and conferences on anesthesiology and critical care medicine by calculating the impact factor of their members and first authors, respectively. Our study shows that qualified authors may be found in all three media.

Keywords: Clinical-Practice Issues, Newly Emerging Legal, Health Information, Journals, Impact, Communication, Pediatrics, Tool

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Full Text: [1999\Ane Ana89, 1528.pdf](1999/Ane%20Ana89,%201528.pdf)

Abstract: The purpose of this study was to use citation analysis to identify major themes and contributors to the pain and analgesia Literature over the past two decades. A citation analysis was performed on a database of more than 110,000 articles in the biomedical literature from January 1981 through June 1997, and in the interval from January 1988 through June 1997. Articles and authors related to pain and analgesia research and practice were identified by searching approximately 7,700 journals. The 20 articles and 20 authors with the most citations were then checked by hand to ensure relevance to pain or analgesia. Most of the high-impact articles identified pertained to research on basic pain pathways. Nearly all the articles concerned opioids, nonsteroidal antiinflammatory drugs, and consequences of analgesic use. None of the highest-impact articles address assessment of clinical pain. Few women were first authors of any most frequently cited paper. Citation analysis is a useful tool in identifying important contributions to the biomedical literature. Recent and continuing research trends include the use of nonsteroidal antiinflammatory drugs, opioid mechanisms, and persistent pain disorders. Current trends expected to become stronger include description of pain from the patient’s perspective and mechanisms of the transit-ion from acute to chronic pain. Implications: We performed a citation analysis to identify important contributions and contributors to the biomedical literature. Recent pain and analgesia research has been focused on mechanisms of pain, but evidence suggests the importance of understanding the pain experience from the patient’s perspective and the transition from acute to chronic pain.

Keywords: Cochrane-Collaboration, Physical Therapy, Perspective, Journals, Classics, Authors, Index

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Full Text: [2003\Ane Ana97, 634.pdf](2003/Ane%20Ana97,%20634.pdf)

Abstract: Cardiac complications are the leading cause of death after noncardiac surgery. Despite theoretical benefits, calcium channel blockers (CCB) are not widely used in the perioperative setting. This systematic review assessed the efficacy of CCBs during noncardiac surgery. MEDLINE, EMBASE, Science Citation Index, PubMed, and reference lists were searched without language restriction for randomized controlled trials (RCT) evaluating CCBs during noncardiac surgery. Two reviewers independently abstracted data on death, myocardial infarction (MI), ischemia, supraventricular tachyarrhythmia (SVT), and congestive heart failure (CHF). Treatment effects were calculated as relative risks (RR) with 95% confidence intervals (CI). Eleven studies (1007 patients) were included. CCBs significantly reduced ischemia (RR, 0.49; 95% CI, 0.30-0.80; P = 0.004) and SVT (RR, 0.52; 95% CI, 0.37-0.72; P < 0.0001). CCBs were associated with trends towards reduced death and MI. In post hoc analyses, CCBs significantly reduced cleath/Ml (RR, 0.35; 95% CI, 0.15-0.86; P = 0.02) and major morbid events (MME), defined as death, MI, or CHF (RR, 0.39; 95% CI, 0.17-0.89; P = 0.02). In subgroup analyses, diltiazem significantly reduced ischemia, SVT, death/ MI, and MMEs. This meta-analysis shows CCBs significantly reduced ischemia, SVT, and combined end-points in the setting of noncardiac surgery. The majority of these benefits are attributable to diltiazem, suggesting the need for further evaluation of this drug in a large RCT.

Keywords: Blockade, Calcium, Citation, Diltiazem, Evaluation, Language, Medline, Meta-Analysis, Mortality, Nifedipine, Postoperative Myocardial-Ischemia, Quality, Randomized Trials, Review, Science, Science Citation Index, Surgery, Systematic Review, Therapy, Trends, Vascular-Surgery, Verapamil

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Full Text: [2004\Ane Ana98, 443.pdf](2004/Ane%20Ana98,%20443.pdf)

Abstract: The number of citations an article receives after its publication reflects its recognition in the scientific community. In the present study, therefore, we identified and examined the characteristics of the top 100 most frequently cited articles published in anesthetic journals. These articles were identified using the database of the Science Citation Index Expanded (SCI-EXPANDED, 1945 to present) and the Web of SCIENCE(R). The most-cited article received 707 citations and the least cited article received 197 citations, with a mean of 283 citations per article. These citation classics were published between 1954 and 1997 in 5 high-impact anesthetic journals, led by Anesthesiology (73 articles) followed by Anesthesia & Analgesia (10), British Journal of Anesthesia (10), Anesthesia (6), and Acta Anaesthesiologica Scandinavica (2). Seventy-eight articles were original publications, 22 were review articles, and one was an editorial. They originated from nine countries, with the United States contributing 70 articles. Within the United States, California leads the list of citation classics with 25 articles. Twenty-nine persons authored two or more of the top-cited articles. The main topics covered by the top-cited articles are pharmacology, volatile anesthetics, circulation, regional anesthesia, and lung physiology. This analysis of citation rates allows for the recognition of seminal advances in anesthesia and gives a historic perspective on the scientific progress of this specialty.

Keywords: Archives, Impact Factors, Most-Cited Articles, Pain, PCO2, PO2, Temperature, Toxicity

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Abstract: BACKGROUND: Mortality and morbidity in ambulatory surgery are rare, and thus the patient’s quality of life (i.e., the ability to resume normal activities after discharge home) should be considered one of the principle end-points after ambulatory surgery and anesthesia. We conducted a systematic review of the instruments to measure the quality of recovery of ambulatory surgical patients in order to advise on the selection of appropriate measures for research and quality assurance. METHODS: A systematic literature search of MEDLINE, EMBASE, CINAHL, HAPI, PsycINFO, Web of Science Search History, Biosys Previews Search, HealthStar, and ASSIA was performed to identify patient-based outcome measures to assess postoperative recovery from ambulatory anesthesia. The instruments were assessed for eight criteria: appropriateness, reliability, validity, responsiveness, precision, interpretability, acceptability, and feasibility. RESULTS: Seven articles met the inclusion criteria set for the review. The quality of the identified instruments was variable. CONCLUSION: Only one instrument, 40-item Quality of recovery score, fulfilled all eight criteria, however this instrument was not specifically designed for ambulatory surgery and anesthesia.

Keywords: Activities, Anesthesia, EMBASE, Endpoints, Feasibility, Health-Status, History, Literature, Medline, Morbidity, Mortality, Normal, Outcome, Outcomes, Quality, Quality of Life, Quality-of-Life, Reliability, Research, Review, Scales, Science, Score, Surgery, Surgical, Systematic, Systematic Review, Tool, Validity, Web of Science

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Full Text: [2008\Ane Ana106, 1524.pdf](2008/Ane%20Ana106,%201524.pdf)

Abstract: BACKGROUND: The expansion of science has resulted in an increased information flow and in an exponentially growing number of connections between knowledge in different research fields. In this study, we used methods of scientometric analysis to obtain a conceptual network that forms the structure of active scientific research fields in anesthesia. METHODS: We extracted from the Web of Science (R) (Institute for Scientific Information) all original articles (n = 3275) including their references (n = 79,972) that appeared in 2003 in all 23 journals listed in the Institute for Scientific Information journal Citation Reports’ under the subject heading “Anesthesiology.” After identification of highly cited references (>= 5), pairs of co-cited references were created and grouped into uniformly structured clusters of documents using a single linkage and variable level clustering method. In addition, for each such cluster of documents, we identified corresponding front papers published in 2003, each of which co-cited at least two documents of the cluster core. Active anesthetic research fields were then named by examining the titles of the documents in both the established clusters and in their corresponding front papers. These research fields were sorted according to the proportion of recent documents in their cluster core (immediacy index) and were further analyzed. RESULTS: Forty-six current anesthetic research fields were identified. The research field named “ProSeal laryngeal mask airway” showed the highest immediacy index (100%) whereas the research fields “Experimental models of neuropathic pain” and “Volatile anesthetic-induced cardioprotection” exhibited the highest level of co-citation strength (level 9). The research field with the largest cluster core, containing 12 homogeneous papers, was “Postoperative nausea and vomiting.” The journal Anesthesia & Analgesia published most front papers while Anesthesiology published most of the fundamental documents used as references in the front papers. CONCLUSIONS: Using co-citation analysis, we identified distinct homogenous clusters of highly cited documents representing 46 active current anesthetic research fields and determined multiple nets of knowledge among them.

Keywords: Analysis, Anesthesia, Bispectral Index, Citation, Citation Analysis, Co-Citation Analysis, Cocitation, Highly-Cited, Information, Informetrics, Journal, Journals, Knowledge, Literature, Networks, Neuropathic Pain, Papers, Propofol, Rat, Remifentanil, Research, Science, Scientific Information, Scientific Research, Scientometric Analysis, Scientometrics, Web of Science

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Full Text: [2007\Ane Ana105, 1741.pdf](2007/Ane%20Ana105,%201741.pdf)

Abstract: BACKGROUND: Few studies have investigated the diversity in research conducted by anesthesia-based researchers. We examined global clinical research attributed to anesthesia departments using Medline (R) and Ovid (R) databases. We also investigated the impact of economic development on national academic productivity. METHODS: We conducted a Medline search for English-language publications from 2000 to 2005. The search included only clinical research in which institutional affiliation included words relating to anesthesia (e.g., anesthesiology, anesthesia, etc.). Population and gross national income data were obtained from publicly available databases. Impact factors for journals were obtained from Journal Citation Reports (Thomson Scientific). RESULTS: There were 6736 publications from 64 countries in 551 journals. About 85% of all publications were represented by 46 journals. Randomized controlled trials constituted 4685 (70%) of publications. Turkey had the highest percentage of randomized controlled trials (88%). The United States led the field in quantity (20% of total) and mean impact factor (3.0) of publications. Finland had the highest productivity when adjusted for population (36 publications per million population). Publications from the United States declined from 23% in 2000 to 17% in 2005. CONCLUSIONS: Clinical research attributable to investigators in our specialty is diverse, and extends beyond the traditional field of anesthesia and intensive care. The United States produces the most clinical research, but per capita output is higher in European nations.

Keywords: Bibliometric Analysis, Countries, Impact Factor, Journals, Publications, Quality, Randomized Controlled Trials, Trials

? Jankovic, M.P., Kaufmann, M. and Kindler, C.H. (2008), Active research fields in anesthesia: A document co-citation analysis of the anesthetic literature. *Anesthesia and Analgesia*, **106** (5), 1524-1533.

Full Text: [2008\Ane Ana106, 1524.pdf](2008/Ane%20Ana106,%201524.pdf)

Abstract: BACKGROUND: The expansion of science has resulted in an increased information flow and in an exponentially growing number of connections between knowledge in different research fields. In this study, we used methods of scientometric analysis to obtain a conceptual network that forms the structure of active scientific research fields in anesthesia. METHODS: We extracted from the Web of Science (R) (Institute for Scientific Information) all original articles (n = 3275) including their references (n = 79,972) that appeared in 2003 in all 23 journals listed in the Institute for Scientific Information journal Citation Reports’ under the subject heading “Anesthesiology.” After identification of highly cited references (>= 5), pairs of co-cited references were created and grouped into uniformly structured clusters of documents using a single linkage and variable level clustering method. In addition, for each such cluster of documents, we identified corresponding front papers published in 2003, each of which co-cited at least two documents of the cluster core. Active anesthetic research fields were then named by examining the titles of the documents in both the established clusters and in their corresponding front papers. These research fields were sorted according to the proportion of recent documents in their cluster core (immediacy index) and were further analyzed. RESULTS: Forty-six current anesthetic research fields were identified. The research field named “ProSeal laryngeal mask airway” showed the highest immediacy index (100%) whereas the research fields “Experimental models of neuropathic pain” and “Volatile anesthetic-induced cardioprotection” exhibited the highest level of co-citation strength (level 9). The research field with the largest cluster core, containing 12 homogeneous papers, was “Postoperative nausea and vomiting.” The journal Anesthesia & Analgesia published most front papers while Anesthesiology published most of the fundamental documents used as references in the front papers. CONCLUSIONS: Using co-citation analysis, we identified distinct homogenous clusters of highly cited documents representing 46 active current anesthetic research fields and determined multiple nets of knowledge among them.

Keywords: Analysis, Anesthesia, Clustering, Co-Citation, Co-Citation Analysis, Cocitation, Identification, Immediacy Index, Information, Institute for Scientific Information, Journal, Journals, Knowledge, Linkage, Literature, Methods, Models, Network, Papers, Research, Science, Scientific Research, Scientometric, Structure, Web of Science

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Full Text: [2008\Ane Ana106, 1589.pdf](2008/Ane%20Ana106,%201589.pdf)

Keywords: Assessment, Publication, Quality

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Full Text: [2009\Ane Ana108, 105.pdf](2009/Ane%20Ana108,%20105.pdf)

Abstract: BACKGROUND: The Science Citation Index “Journal Impact Factor” (JIF) is widely used to assess journal quality and prestige. The JIFs for the specialty anesthesia are reported annually, however, the impact factors (IFs) for subspecialties in those journals have not been reported. Therefore, we compared the TFs of pediatric anesthesia (Ped IFs) and pain (Pain IFs) articles from four anesthesia journals for two epochs. METHODS: An article-by-article manual search for “source” pediatric anesthesia and pain articles published in 1998, 1999, 2003, and 2004 in Anesthesiology, Anesthesia & Analgesin, British Jounal of Anaesthesia, and Canadian Journal of Anesthesia was performed. The citations for each of these articles in each of the years were surveyed in the ISI Web of Science database. Ped IFs and Pain IFs for the 2000 and 2005 epochs were calculated and compared with the JIF from which they were derived and to those of the journal, Pediatric Anesthesia. RESULTS: Ped IFs for the four journals in 2005 exceeded those in 2000, whereas the Pain IFs were unchanged. For both the Ped IFs and the Pain IFS, there was a significant effect of the journal. The Pain IFs were 70%, greater than the Ped IFs. CONCLUSIONS: Ped IFs were consistently less than the JIFs in which they were published and the Pain IFs, except for the British Journal of Annaesthesia 2005 in the latter case. The numbers of citations of pediatric anesthesia articles were greater in journals with greater IFs. The implications of subspecialty IFs warrant further consideration.

Keywords: Future, Medical Journals

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Full Text: [2008\Ane Ana107, 1543.pdf](2008/Ane%20Ana107,%201543.pdf)

Abstract: BACKGROUND: Obstructive sleep apnea (OSA) is present in a significant proportion of the population, but the majority of patients remain undiagnosed. It is crucial that anesthesiologists and surgeons recognize the increased perioperative risks associated with undiagnosed OSA. We present a systematic review of the literature on the perioperative management of surgical patients with OSA. METHODS: The scope of this review is restricted to publications in all surgical specialties and in the adult patient population. The main search key words were: “perioperative care,” “sleep apnea,” “obstructive sleep apnea,” “perioperative risk,” and “perioperative care.” The databases Medline, Embase, Biological Abstract, Science Citation Index, and Healthstar were searched for relevant English language articles from 1966 to March 2007. RESULTS: The literature supports an increased perioperative risk in OSA patients. The American Society of Anesthesiologists guidelines support the routine screening for OSA during preoperative asSEssment, and methods of OSA screening are discussed in this review. This review suggests a number of perioperative management strategies to reduce surgical risk in patients with OSA. However, apart from the consensus-based American Society of Anesthesiologists guidelines, it is important to note that evidence-based recommendations are lacking in the literature. CONCLUSIONS: This review suggests ways to screen for OSA in the preoperative setting and proposes perioperative management strategies. The ultimate goal is to reduce the perioperative risk of OSA patients but, to realize that goal, research will be needed to determine whether screening for OSA and/or adapting specific perioperative management approaches:. translates into a lessening of adverse events in surgical patients with undiagnosed OSA.

Keywords: Articles, Blood-Pressure, Body-Mass Index, Breathing Disorders, Cardiac-Arrhythmias, Citation, Databases, Difficult Tracheal Intubation, English, Language, Literature, Management, Medline, Methods, Oxygen Desaturation, Patient-Controlled Analgesia, Positive Airway Pressure, Publications, Randomized Controlled-Trial, Research, Review, Risk, Risk-Factor, Science, Science Citation Index, Screening, Sleep, Systematic Review

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Full Text: [2010\Ane Ana110, 918.pdf](2010/Ane%20Ana110,%20918.pdf)

Abstract: BACKGROUND: The past 20 yr have seen significant growth in China’s role in the international community. This same growth and international presence is occurring in the field of anesthesiology. The research status in anesthesiology among Chinese individuals in the 3 major regions of China-mainland China, Hong Kong, and Taiwan-is unknown. We analyzed articles published in peer-reviewed international anesthesiology journals cited by both PubMed and Science Citation Index from these 3 regions. METHODS: Articles published in 21 journals in anesthesiology originating from mainland China, Taiwan, and Hong Kong from 1999 to 2008 were retrieved from the PubMed database and the Science Citation Index. The number of total articles, clinical trials, randomized controlled trials, impact factors, citations, and articles published in “high-impact” journals were tabulated to assess both the quantity and quality of research arising from China. RESULTS: From 1999 to 2008 there were 721 articles published in high-impact anesthesiology journals from China, including 204 from mainland China, 317 from Taiwan, and 200 from Hong Kong. The number of articles published each year increased from 50 published in 1999 to 101 published in 2008. From 2005 onward, the number of articles published from mainland China exceeded that from Hong Kong and in 2008 mainland China exceeded Taiwan. The average impact factor of the articles was similar for mainland China (2.84), Taiwan (2.41), and Hong Kong (2.16). The total citations to articles from Taiwan (2376) exceeded citations to articles from mainland China (1143) and Hong Kong (1540). Anesthesia & Analgesia published more articles than any other journal from all 3 regions. CONCLUSION: The total number of articles from China published in highly cited anesthesiology journals increased markedly from 1999 to 2008, with articles from mainland China increasing substantially after 2004, whereas the number of publications from Hong Kong decreased. The average impact factor was similar for all 3 regions, ranging from 2.2 to 2.8. Anesthesia & Analgesia published more articles from Chinese authors from all 3 regions than any other journal. (Anesth Analg 2010;110:918-21).

Keywords: Articles, China, Citation, Citations, Database, Growth, Hong Kong, Impact, Impact Factor, Impact Factors, International, Journal, Journals, Literature, Number of Publications, Publications, Research, Science, Science Citation Index

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Full Text: [2011\Ane Ana112, 674.pdf](2011/Ane%20Ana112,%20674.pdf)

Abstract: BACKGROUND: Publication misrepresentation has been documented among applicants for residency positions in several specialties. However, these data are not available for anesthesiology applicants. Our purpose in this study was to document the prevalence of publication misrepresentation among applicants to a single anesthesiology residency, to compare anesthesiology publication misrepresentation data with similar data in other specialties, and to determine how often publication misrepresentation leads to an unfair competitive advantage in the application process. METHODS: Applications to the Mayo School of Graduate Medical Education anesthesiology core residency in Rochester, Minnesota, were reviewed for publication misrepresentations using Medline and PubMed databases, Mayo Clinic library databases, and/or review by a qualified medical librarian. Misrepresented publications underwent further review to identify fraudulent publications and/or citation errors that provide an unfair competitive advantage. RESULTS: The authors found that 2.4% of the applications (13 of 532) included fraudulent publications, 6.6% of the applications with at least 1 publication (13 of 197) included >= 1 that was fraudulent, and 2.9% of all cited publications (15 of 522) were fraudulent. In addition, 0.9% of the applications (5 of 532) contained a citation error that, although not grossly fraudulent, could have favorably affected the applicant’s competitiveness for a residency position. CONCLUSIONS: Misrepresented publications were fairly common among anesthesiology residency applicants. However, only a small percentage of applicants listed misrepresented publications that were clearly fraudulent or contained a citation error that conferred a competitive advantage. Identification of fraudulent publications on Electronic Residency Application Service applications is important to maintain the integrity of the application process. (Anesth Analg 2011;112:674-7).

Keywords: Anesthesiology, Application, Authors, Authorship, Background, Citation, Citation Error, Citation Errors, Competitive, Data, Databases, Error, Errors, Fellowships, Mar, Medical, Methods, Prevalence, Program, Publication, Publications, Pubmed, Purpose, Residency, Review, Small

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Full Text: 2011\Ane Ana112, 1411.pdf

Abstract: BACKGROUND: Acute hypoxemic respiratory failure, defined as acute lung injury and acute respiratory distress syndrome, are critical conditions associated with frequent mortality and morbidity in all ages. Inhaled nitric oxide (iNO) has been used to improve oxygenation, but its role remains controversial. We performed a systematic review with meta-analysis and trial sequential analysis of randomized clinical trials (RCTs). We searched CENTRAL, Medline, EMBASE, International Web of Science, LILACS, the Chinese Biomedical Literature Database, and CINHAL (up to January 31, 2010). Additionally, we hand-searched reference lists, contacted authors and experts, and searched registers of ongoing trials. Two reviewers independently selected all parallel group RCTs comparing iNO with placebo or no intervention and extracted data related to study methods, interventions, outcomes, bias risk, and adverse events. All trials, irrespective of blinding or language status were included. Retrieved trials were evaluated with Cochrane methodology. Disagreements were resolved by discussion. Our primary outcome measure was all-cause mortality. We performed subgroup and sensitivity analyses to assess the effect of iNO in adults and children and on various clinical and physiological outcomes. We assessed the risk of bias through assessment of trial methodological components. We assessed the risk of random error by applying trial sequential analysis. RESULTS: We included 14 RCTs with a total of 1303 participants; 10 of these trials had a high risk of bias. iNO showed no statistically significant effect on overall mortality (40.2% versus 38.6%) (relative risks [RR] 1.06, 95% confidence interval [CI] 0.93 to 1.22; I(2) = 0) and in several subgroup and sensitivity analyses, indicating robust results. Limited data demonstrated a statistically insignificant effect of iNO on duration of ventilation, ventilator-free days, and length of stay in the intensive care unit and hospital. We found a statistically significant but transient improvement in oxygenation in the first 24 hours, expressed as the ratio of PO(2) to fraction of inspired oxygen (mean difference [MD] 15.91, 95% CI 8.25 to 23.56; I(2) = 25%). However, iNO appears to increase the risk of renal impairment among adults (RR 1.59, 95% CI 1.17 to 2.16; I(2) = 0) but not the risk of bleeding or methemoglobin or nitrogen dioxide formation. CONCLUSION: iNO cannot be recommended for patients with acute hypoxemic respiratory failure. iNO results in a transient improvement in oxygenation but does not reduce mortality and may be harmful. (Anesth Analg 2011; 112: 1411-21).

Keywords: Adults, Analysis, Assessment, Authors, Bias, Children, Clinical Trials, Clinical-Trials, Cochrane, Cumulative Metaanalysis, Distress, Failure, Hospital, Inhalation, Injury, Intensive Care, Intensive Care Unit, Intervention, Interventions, Length of Stay, Limitations, Meta-Analysis, Methodology, Monitoring Boundaries, Morbidity, Mortality, Multicenter, Outcome, Outcomes, Primary, Randomized Clinical Trials, Randomized Controlled-Trial, Ratio, Respiratory Distress Syndrome, Review, Risk, Science, Systematic, Systematic Review, Therapy, Ventilation, Web of Science

# Title: Anesthesiology

Full Journal Title: [Anesthesiology](http://ovidsp.uk.ovid.com/spa/ovidweb.cgi)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0003-3022

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Watcha, M.F. and White, P.F. (1992), Postoperative nausea and vomiting - Its etiology, treatment, and prevention. *Anesthesiology*, **77** (1), 162-184.

Keywords: Analgesics, Nonsteroidal Antiinflammatory, Opioids, Anesthesia, General, Regional, Anesthetics, Gases, Nitrous Oxide, Anesthetics, Intravenous, Anesthetics, Volatile, Complications, Vomiting, Drugs, Antiemetics, Transdermal Hyoscine Scopolamine, Traditional Chinese Acupuncture, Chemotherapy-Induced Emesis, Cisplatin-Induced Nausea, Strabismus Surgery, Nitrous-Oxide, Pharmacological Properties, Outpatient Anesthesia, Cancer-Chemotherapy, General-Anesthesia

? Biebuyck J.F. (1992), Concerning the ethics and accuracy of scientific citations. *Anesthesiology*, **77** (1), 1-2.

Full Text: [1992\Anesthesiology77, 1.pdf](1992/Anesthesiology77,%201.pdf)

McLellan, M.F., Case, L.D. and Barnett, M.C. (1992), Trust, but verify - the accuracy of references in four anesthesia journals. *Anesthesiology*, **77** (1), 185-188.

Full Text: [1992\Anesthesiology77, 185.pdf](1992/Anesthesiology77,%20185.pdf)

Abstract: To determine the accuracy of bibliographic citation in the anesthesia literature, we reviewed all 1988 volumes of ANESTHESIOLOGY, Anesthesia and Analgesia, British Journal of Anaesthesia, and Canadian Journal of Anaesthesia and sequentially numbered all references appearing in that year (n = 22, 748). One hundred references from each of the four journals were randomly selected. After citations to nonjournal articles (i.e., books or book chapters) were excluded, the remaining 348 citations were analyzed in detail. Six standard bibliographic elements-authors’ names, article title, journal title, volume number, page numbers, and year-were examined in each selected reference. Primary sources were reviewed, unless our institution did not own the source or could not obtain it through interlibrary loan, in which case standard indexes, abstracting services, and computerized databases were consulted. Each element was checked for accuracy, and references were classified as either correct or incorrect. A reference was correct if each element of the citation was identical to its source. of the examined references, more than half (50.3%) contained an error in at least one element. The elements most likely to be inaccurate were, in descending order, article title, author, page numbers, journal title, volume number, and year. No significant differences (P = 0.283) existed in the error rates of the four journals; the percentage of citations containing at least one error ranged from 44% (Anesthesia and Analgesia) to 56% (British Journal of Anaesthesia). The citation error rate of anesthesia journals is similar to that reported in other specialties, where error rates ranging from 38% to 54% have been documented.

Keywords: Publications, Documentation, Anesthesiology, Anesthesia and Analgesia, British Journal of Anesthesia, Canadian Journal of Anesthesia

Nishina, K., Asano, M., Mikawa, K., Maekawa, N. and Obara, H. (1995), Improvement of the accuracy of references in anesthesiology. *Anesthesiology*, **83** (2), 599-600.

Full Text: [1995\Anesthesiology82, 599.pdf](1995/Anesthesiology82,%20599.pdf)

? Svircevic, V., van Dijk, D., Nierich, A.P., Passier, M.P., Kalkman, C.J., van der Heijden, G.J.M.G. and Bax, L. (2011), Meta-analysis of thoracic epidural anesthesia versus general anesthesia for cardiac surgery. *Anesthesiology*, **114** (2), 271-282.

Full Text: [2011\Anesthesiology114, 271.pdf](2011/Anesthesiology114,%20271.pdf)

Abstract: Background: A combination of general anesthesia (GA) with thoracic epidural anesthesia (TEA) may have a beneficial effect on clinical outcomes after cardiac surgery. We have performed a meta-analysis to compare mortality and cardiac, respiratory, and neurologic complications in patients undergoing cardiac surgery with GA alone or a combination of GA with TEA. Methods: Randomized studies comparing outcomes in patients undergoing cardiac surgery with either GA alone or GA in combination with TEA were retrieved from PUBMED, Science Citation index, EMBASE, CINHAL, and Central Cochrane Controlled Trial Register databases. Results: The search strategy yielded 1,390 studies; 28 studies that included 2,731 patients met the selection criteria. Compared with GA alone, the combined risk ratio for patients receiving GA with TEA was 0.81 (95% CI: 0.40-1.64) for mortality, 0.80 (95% CI: 0.52-1.24) for myocardial infarction, and 0.59 (95% CI: 0.24-1.46) for stroke. The risk ratios for the respiratory complications and supraventricular arrhythmias were 0.53 (95% CI: 0.40-0.69) and 0.68 (95% CI: 0.50-0.93), respectively. Conclusions: This meta-analysis showed that the use of TEA in patients undergoing cardiac surgery reduces the risk of postoperative supraventricular arrhythmias and respiratory complications. The sparsity of events precludes conclusions about mortality, myocardial infarction, and stroke, but the estimates suggest a reduced risk after TEA. The risk of side effects of TEA, including epidural hematoma, could not be assessed with the current dataset, and therefore TEA should be used with caution until its benefit-harm profile is further elucidated.

Keywords: Anesthesia, Artery-Bypass-Surgery, Cardiopulmonary Bypass, Citation, Clinical, Clinical Outcomes, Complications, Criteria, Databases, Epidural, Epidural Anesthesia, Epidural Hematoma, Estimates, Events, General, General Anesthesia, Graft-Surgery, Hematoma, Hospital Stay, Index, Infarction, Inflammatory Response, Meta-Analysis, Metaanalysis, Mortality, Myocardial Blood-Flow, Myocardial Infarction, Neurologic, Outcomes, Patients, Postoperative, Postoperative Atrial-Fibrillation, PUBMED, Randomized Controlled-Trial, Risk, Science, Search Strategy, Selection Criteria, Side Effects, Strategy, Stroke, Supraventricular, Surgery, Troponin-T, Ventilation-Perfusion Relationships

# Title: Angewandte Chemie

Full Journal Title: [Angewandte Chemie](http://www3.interscience.wiley.com/cgi-bin/jtoc/106572259/); [Angewandte Chemie](http://www3.interscience.wiley.com/cgi-bin/jtoc/26737/all)

ISO Abbreviated Title:

JCR Abbreviated Title: Angew Chem

ISSN: 0003-3146

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Saunders, L. and Srivastava, R.S. (1954), The kinetics of adsorption of some organic bases by weak cation-exchange resins. *Angewandte Chemie*, **66** (10), 276.

# Title: Angewandte Chemie-International Edition

Full Journal Title: [Angewandte Chemie-International Edfvition](http://www3.interscience.wiley.com/journal/26737/home)

ISO Abbreviated Title: Angew. Chem.-Int. Edit.

JCR Abbreviated Title: Angew Chem Int Ed

ISSN: 0003-3146

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Monod, J. (1959), Adaptive enzymbildung. *Angewandte Chemie-International Edition*, **71** (10), 342.

Full Text: Ang Che-Int Edi70, 342

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Full Text: Ang Che-Int Edi71, 685

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Full Text: [1960-80\Ang Che-Int Edi10, 79.pdf](1960-80/Ang%20Che-Int%20Edi10,%2079.pdf)

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Full Text: [2001\Ang Che40, 139.pdf](2001/Ang%20Che40,%20139.pdf)

Keywords: Citation, Impact, Journals, Science Citation Index

Notes: highly cited

? Kitagawa, S., Kitaura, R. and Noro, S. (2004), Functional porous coordination polymers. *Angewandte Chemie-International Edition*, **43** (18), 2334-2375.

Full Text: [2004\Ang Che-Int Edi43, 2334.pdf](2004/Ang%20Che-Int%20Edi43,%202334.pdf)

Abstract: The chemistry of the coordination polymers has in recent years advanced extensively, affording various architectures, which are constructed from a variety of molecular building blocks with different interactions between them. The next challenge is the chemical and physical functionalization of these architectures, through the porous properties of the frameworks. This review concentrates on three aspects of coordination polymers: 1) the use of crystal engineering to construct porous frameworks from connectors and linkers (“nanospace engineering”), 2) characterizing and cataloging the porous properties by functions for storage, exchange, separation, etc., and 3) the next generation of porous functions based on dynamic crystal transformations caused by guest molecules or physical stimuli. Our aim is to present the state of the art chemistry and physics of and in the micropores of porous coordination polymers.

Keywords: Coordination Polymers, Dynamic Properties, Gas-Adsorption Properties, Hydrogen-Bonded Networks, Inclusion Compounds, Metal-Organic Framework, Metal-Organic Frameworks, Microporous Materials, Nickel(II) Macrocyclic Complexes, Pore-Size Distribution, Secondary Building Units, Selective Guest Binding, Tetra-N-Butylammonium, Walled Carbon Nanotubes, X-Ray-Diffraction

Notes: highly cited

? Rowsell, J.L.C. and Yaghi, O.M. (2005), Strategies for hydrogen storage in metal-organic frameworks. *Angewandte Chemie-International Edition*, **44** (30), 4670-4679.

Full Text: [2005\Ang Che-Int Edi44, 4670.pdf](2005/Ang%20Che-Int%20Edi44,%204670.pdf)

Abstract: Increased attention is being focused on metal-organic frameworks as candidates for hydrogen storage materials. This is a result of their many favorable attributes, such as high porosity, reproducible and facile syntheses, amenability to scale-up, and chemical modification for targeting desired properties. A discussion of several strategies aimed at improving hydrogen uptake in these materials is presented. These strategies include the optimization of pore size and adsorption energy by linker modification, impregnation, catenation, and the inclusion of open metal sites and lighter metals.

Keywords: Adsorption, Adsorption, Carbon Nanotubes, Design, Hydrogen, Hydrogen Storage, Metal-Organic Frameworks, Methane Storage, Microporous Coordination Polymer, Microporous Materials, Organic-Inorganic Hybrid Composites, Physisorption, Porous Material, Review, Secondary Building Units, Sorption Properties, Storage, Surface-Area, USA

Notes: highly cited

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Full Text: [2005\Ang Che-Int Edi44, 5814.pdf](2005/Ang%20Che-Int%20Edi44,%205814.pdf)

Keywords: Coordination Polymers, Helical Structures, Lanthanicles, N Ligands, O Ligands, Crystal-Structure, Coordination Polymers, Complexes, Network, Chemistry, Solids, Design, Adsorption, Acid, Size

Notes: highly cited

? Fang, Q.R., Zhu, G.S., Jin, Z., Xue, M., Wei, X., Wang, D.J. and Qiu, S.L. (2006), A multifunctional metal-organic open framework with a bcu topology constructed from undecanuclear clusters. *Angewandte Chemie-International Edition*, **45** (37), 6126-6130.

Full Text: [2006\Ang Che-Int Edi45, 6126.pdf](2006/Ang%20Che-Int%20Edi45,%206126.pdf)

Keywords: Cadmium, Carboxylate Ligands, Clusters, Materials Science, Supramolecular Chemistry, Secondary Building Units, Coordination Polymers, Nanoporous Material, Hybrid Framework, Porous Material, Design, Chemistry, Adsorption, Hydrogen, Sorption

# Title: Angewandte Informatik

Full Journal Title: Angewandte Informatik

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Grochla, E., Seibt, D., Schmitz, P. and Szypersk, N. (1972), Proposal for a course of study bachelor of commerce specialized in informatics. *Angewandte Informatik*, (2), 81-??.

# Title: Angewandte Makromolekulare Chemie

Die Angewandte Makromolekulare Chemie

See Also: [Die Angewandte Makromolekulare Chemie 1967 - 1997](http://www3.interscience.wiley.com/cgi-bin/jhome/103527675)

Full Journal Title: [Angewandte Makromolekulare Chemie](http://www3.interscience.wiley.com/cgi-bin/jtoc/10048709/all)

ISO Abbreviated Title: Angew. Makromol. Chem.

JCR Abbreviated Title: Angew Makromol Chem

ISSN: 0003-3146

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Patel, V.M., Patel, C.K. and Patel, R.D. (1970), Adsorption of poly(methyl methacrylate) on aluminium silicate. *Angewandte Makromolekulare Chemie*, **13** (1), 195-198.

Full Text: [1960-80\Ang Mak Che13, 195.pdf](1960-80/Ang%20Mak%20Che13,%20195.pdf)

Abstract: Adsorption of polymeric materials onto solid surfaces plays an important role in a large number of practical applications. There are various factors that influence the adsorption of polymers and one of them is the nature of adsorbents. The porosity of the adsorbent plays an important role in the study of the fractionation of polymers1-4. However, the effect of porosity of the adsorbent is not well established. The present work describes a study on the adsorption of poly(methy1 methacrylate) - PMMA - on a porous &isorbent aluminium silicate.

? Göbel, G. and Starnick, J. (1978), Zur Adsorptionspolymerisation auf porösen Feststoffen. 1. Kinetische Untersuchungen der Adsorptionspolymerisation auf der oberfläche von porösem silicagel. *Angewandte Makromolekulare Chemie*, **71** (1), 167-188.

Full Text: [1960-80\Ang Mak Che71, 167.pdf](1960-80/Ang%20Mak%20Che71,%20167.pdf)

Abstract: The polymerization of different monomers adsorbed from the vapour-phase onto the internal surface of porous silica containing vinyl groups has been investigated. The macromolecules were covalently bound to the inorganic solid.

Polymerization was initiated by radicals generated by thermal decomposition of adsorbed AIBN at 60°C. Adsorption and simultaneous polymerization has been measured by a sensitive spring balance. The rate of polymerization in the adsorbed state is given by the equation:

vBr=K.[1 ]0.4’. [M] 2.3

A strict first-order reaction related to the adsorbed monomer concentration has been obtained in the multimolecular adsorption range, while a nearly second order reaction could be measured below the monolayer capacity of silica. A formal kinetic scheme of the elementary polymerization steps in the adsorbed state including the reactive centers of the solid surface is proposed to explain the experimental results. The thermal degradation and the structure of porous silica containing polystyrene has been described.

? Göbel, G. and Starnick, J. (1978), Adsorption polymerization on porous solids. 1. Kinetic investigation of adsorption polymerization on porous silica. *Angewandte Makromolekulare Chemie*, **71** (1), 167-188.

Full Text: [1960-80\Ang Mak Che71, 167.pdf](1960-80/Ang%20Mak%20Che71,%20167.pdf)

Abstract: Durch Polymerisation verschiedener adsorbierter Monomermoleküle auf der Oberfläche von porösem, vinylsubstituiertem Silicagel wurden polymermodifizierte Gele hergestellt, deren Polymerisatschicht über Si-C-Bindungen kovalent mit dem anorganischen Gerüst verankert ist.

Die Polymerisation erfolgte mit Hilfe eines radikalischen Initiators bei 60°C in einem aus der Gasphase an der Porenoberfläche kondensierten Monomerfilm. Adsorption und simultane Polymerisation wurden gravimetrisch verfolgt und das Monomerangebot über den Partialdruck des flüchtigen Monomeren gesteuert. Die radikalische Adsorptionspolymerisation führte zu einem Zeitgesetz der Form:

Im Bereich der Mehrschichtenadsorption konnte eine Reaktion erster Ordnung in bezug auf die Monomerkonzentration entsprechend der radikalischen Substanzpolymerisation nachgewiesen werden. Eine Erniedrigung des Adsorbatgehaltes unter die Monoschichtkapazität des Trägers führte zu einer Erhöhung der Reaktionsordnung bezogen auf die adsorbierte Monomermenge. In einem Reaktionsschema wurden die charakteristischen Reaktionen and der Feststoffoberfläche durch Einbeziehen der reaktiven Zentren in den Reaktionsablauf berücksichtigt und ein Zeitgesetz für die Adsorptionspolymerisation auf porösem Silicagel aufgestellt.

Die thermischen Eigenschaften sowie die Hohlraumstruktur styrolmodifizierter Silicagele wurden untersucht.

Translated Abstract

The polymerization of different monomers adsorbed from the vapour-phase onto the internal surface of porous silica containing vinyl groups has been investigated. The macromolecules were covalently bound to the inorganic solid.

Polymerization was initiated by radicals generated by thermal decomposition of adsorbed AIBN at 60°C. Adsorption and simultaneous polymerization has been measured by a sensitive spring balance. The rate of polymerization in the adsorbed state is given by the equation:

A strict first-order reaction related to the adsorbed monomer concentration has been obtained in the multimolecular adsorption range, while a nearly second order reaction could be measured below the monolayer capacity of silica. A formal kinetic scheme of the elementary polymerization steps in the adsorbed state including the reactive centers of the solid surface is proposed to explain the experimental results.

The thermal degradation and the structure of porous silica containing polystyrene has been described.

? Soubelet, O., Maximino, M. and Marxfigini, M. (1991), Involvement of the impregnation in the degree of polymerization of cellulose during soda pulping of sugar-cane bagasse. *Angewandte Makromolekulare Chemie*, **187** (1), 11-17.

Full Text: [1991\Ang Mak Che187, 11.pdf](1991/Ang%20Mak%20Che187,%2011.pdf)

Abstract: A comparative study had been carried out on the behaviour of the degree of polymerization (DP) of sugar cane bagasse during different times of digestion (soda pulping) with and without previous impregnation. Determination of the average DP (DPBAR-eta) and its distribution show that the impregnated materials undergo degradation during the digestion, what in contrary is not to observe when digestion is carried out without previous impregnation. It is supposed that the impregnation alters the chemical structure of the cellulose, facilitating thus the degradation during digestion. From the distribution curves arises furthermore, independent from impregnation or not and independent from the digestion time, a very pronounced maximum (about 25 wt.-% of total mass) at DP < 150 belonging to a non-cellulosic polysaccharide present in the sugar cane bagasse, which is removed neiher by digestion nor by nitration.

# Title: Angiology

Full Journal Title: [Angiology](http://global.umi.com/pqdweb?TS=0&JSEnabled=1&RQT=317&SK=2&ScQ=000036630&TS=1030083628)

ISO Abbreviated Title: Angiology

JCR Abbreviated Title: Angiology

ISSN: 0003-3197

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Westminster Publ Inc

Publisher Address: 708 Glen Cove Ave, Glen Head, NY 11545

Subject Categories:

Peripheral Vascular Disease: Impact Factor (2000)

? Bernardi, D., Dini, F.L., Azzarelli, A., Giaconi, A., Volterrani, C. and Lunardi, M. (1995), Sudden cardiac death rate in an area characterized by high incidence of coronary artery disease and low hardness of drinking water. *Angiology*, **46** (2), 145-149.

Full Text: [1995\Angiology46, 145.pdf](1995/Angiology46,%20145.pdf)

Abstract: From January 1992 to January 1993 the incidence of sudden cardiac death among the population of the Media Valle del Serchio area (Tuscany, Italy), composed of a population of 35,000, was found to be twice that of the European average; 32 cases have been reported over this period in that area (9 per 10,000 in the examined year), with a male/female (M/F) ratio of 2.5 (1) (23 M, 9 F). In Italy the mean incidence of sudden death was calculated as 6/10,000 and in Europe 5/10,000. In the examined population hypertension was the coronary risk factor present most frequently (87%). A previous diagnosis of coronary artery disease was documented in 21 cases (66%); 5 of these exhibited previous myocardial infarction and 3 previous myocardial infarction associated with left ventricular heart failure. In 7 subjects no previous cardiovascular disorders were discovered. Prodromal symptoms had been reported in 20 cases (62%), which included chest pain in 8 and dyspnea in 8. In the examined geographic area a high prevalence of coronary artery disease was verified through the records of the Public Health Service, which documents the main causes of mortality in Tuscany, and through the hospitalization data and the services provided for ischemic heart disease at the local coronary care unit compared with the national average. Moreover, research was accomplished on physical and chemical properties of drinking water in the same area, and this revealed a very low total hardness due to the paucity of calcium and magnesium salts. (ABSTRACT TRUNCATED AT 250 WORDS).

# Title: Angle Orthodontist

Full Journal Title: [Angle Orthodontist](http://www.angleorthodontist.org/anglonline/?request=index-html)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0003-3219

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Sun, R.L., Conway, S., Zawaideh, S. and Niederman, R. (2000), Benchmarking the clinical orthodontic evidence on Medline. *Angle Orthodontist*, **70** (6), 464-470.

Full Text: [2000\Ang Ort70, 464.pdf](2000/Ang%20Ort70,%20464.pdf)

Abstract: The purpose of this study was to identify and quantify the availability of orthodontic literature for evidence-based clinical decision-making (ie, sound clinical studies of etiology, diagnosis, treatment, or prognosis meeting basic methodologic criteria for direct clinical use). This is a first step toward developing online decision analysis systems. A search strategy based on Medical Subject Headings (MeSH) for orthodontics was developed to examine MEDLINE using the Ovid Web Gateway search engine. Sensitive and specific methodologic search filters were then employed to identify the 4 categories of information. The results were then subdivided by year to identify trends and sorted to identify source of publications, In the period 1990 to 1998, the MEDLINE searches identified 6938 English-language articles about orthodontics. The mean number of articles (±SD) per year ranged from 42±25 for specific searches to 314±214 for sensitive searches. The number of articles identified by the specific or sensitive searches increased 14% to 21% annually. When subdivided by clinical category, the mean numbers of articles per year for specific and sensitive searches were respectively: etiology 19±15 and 91±37, diagnosis 11±5 and 80±35, therapy 3±1 and 50±23, and prognosis 10±7 and 93±33. Five dental journals accounted for nearly half of these publications. These results provide several key findings: (1) there is a substantial literature of clinically relevant information in orthodontics upon which to base clinical decisions; (2) the information appears to be balanced between etiology, diagnosis, treatment, and prognosis; (3) approximately 45% of the articles reside in 5 journals, whereas the remainder reside in approximately 66 other journals, making it difficult to stay current; (4) the number of articles is increasing significantly each year; (5) to stay current, one would need to read between 1 and 6 articles per week, 52 weeks per year; (6) these trends suggest the need fur computer-based clinical knowledge systems; and (7) the methods used here can be immediately employed to identify the best and most current clinical orthodontic evidence. (Angle Orthod 2000;70: 000-000.).

Keywords: Bibliometrics, Orthodontics, Etiology, Diagnosis, Therapeutics, Prognosis, Randomized Controlled Trials, Medicine, Health, Searches, Paper, Care, Read

? Ohashi, E., Pecho, O.E., Moron, M. and Lagravere, M.O. (2006), Implant vs screw loading protocols in orthodontics: A systematic review. *Angle Orthodontist*, **76** (4), 721-727.

Abstract: Objective: This systematic review presents the loading protocols applied when using implants and/or screws in orthodontic treatments. Materials and Methods: Clinical trials which assessed the use of implants and/or screws for orthodontic anchorage and studies involving treatment on syndromic patients, surgery, other simultaneous treatments, or appliances (ie mini-plates) were considered. Electronic databases (Medline, Medline In-Process & Other Non-Indexed Citations, Lilacs, PUBMED, EMBASE, Web of Science, and All Evidence Based Medicine Reviews) were searched with the help of a senior Health Sciences librarian. Abstracts which appeared to fulfill the selection criteria were selected by consensus. The original articles were then retrieved and evaluated with a methodological checklist. References were also hand searched for possible missing articles. Results: Eleven articles fulfilled the selection criteria established. Five studies involved the use of implants while six involved the use of screws for orthodontic purposes. An individual methodological analysis for each article was made. Conclusions: Loading protocols for implants involve a minimum waiting period of 2 months before applying orthodontic forces while loading protocols for screws involve immediate loading or a waiting period of 2 weeks to apply forces. Success rates for implants were on average higher than for screws.

Keywords: Analysis, Anchorage, Bone, Citations, Clinical Trials, Databases, Health, Humans, Implants, Methods, Orthodontic Loading, References, Region, Review, Science, Screws, Surgery, Systematic, Systematic Review, Temporary Anchorage Devices, Titanium Screws, Treatment, Web of Science

? Flores-Mir, C. and Major, P.W. (2006), Cephalometric facial soft tissue changes with the twin block appliance in class II division 1 malocclusion patients. *Angle Orthodontist*, **76** (5), 876-881.

Abstract: Objective: To evaluate facial soft tissue changes after the use of the twin block appliance in Class 11 division 1 malocclusion patients. Materials and Methods: Several electronic databases (PUBMED, MEDLINE, MEDLINE In-Process & Other Non-Indexed Citations, Cochrane databases, EMBASE, Web of Science, and LILACS) were searched with the help of a senior health-sciences librarian. Abstracts that appeared to fulfill the initial selection criteria were selected by consensus, and the original articles were retrieved. The article references were hand-searched for possible missing articles. Clinical trials that assessed facial soft tissue changes with the use of the twin block appliance without any surgical intervention or syndromic characteristics were considered. A comparable untreated control group was required to factor out normal growth changes. Results: Two articles fulfilled the selection criteria and quantified facial soft tissue changes. Although some statistically significant changes in the soft tissue profile were found, the magnitude of the changes may not be perceived as clinically significant. Changes produced in the upper lip seem to be controversial, although the study with sounder methodological quality did not report significant changes. No change in the anteroposterior position of the lower lip and the soft tissue menton or improvement of the facial convexity was found. Conclusions: Three-dimensional quantification of the soft tissue changes is required to overcome current limitations in our understanding of the soft tissue changes obtained after the use of the twin block appliance in Class II division 1 malocclusion patients.

Keywords: Bass, Bionator, Citations, Clinical Trials, Clinical-Trials, Cochrane, Control, Databases, Efficacy, EMBASE, Facial Changes, Functional Appliances, Functional Appliances, Health Sciences, Intervention, Mandibular Growth, Medline, Methods, Normal, Profile, PUBMED, Quality, Science, Soft Tissue, Surgical, Systematic Reviews, Twin Block, Web of Science

? Leonardi, R., Giordano, D., Maiorana, F. and Spampinato, C. (2008), Automatic cephalometric analysis: A systematic review. *Angle Orthodontist*, **78** (1), 145-151.

Abstract: Objective: To describe the techniques used for automatic landmarking of cephalograms, highlighting the strengths and weaknesses of each one and reviewing the percentage of success in locating each cephalometric point. Materials and Methods: The literature survey was performed by searching the Medline, the Institute of Electrical and Electronics Engineers, and the ISI Web of Science Citation Index databases. The survey covered the period from January 1966 to August 2006. Abstracts that appeared to fulfill the initial selection criteria were selected by consensus. The original articles were then retrieved. Their references were also hand-searched for possible missing articles. The search strategy resulted in 118 articles of which eight met the inclusion criteria. Many articles were rejected for different reasons; among these, the most frequent was that results of accuracy for automatic landmark recognition were presented as a percentage of success. Results: A marked difference in results was found between the included studies consisting of heterogeneity in the performance of techniques to detect the same landmark. All in all, hybrid approaches detected cephalometric points with a higher accuracy in contrast to the results for the same points obtained by the model-based, image filtering plus knowledge-based landmark search and “soft-computing” approaches. Conclusions: The systems described in the literature are not accurate enough to allow their use for clinical purposes. Errors in landmark detection were greater than those expected with manual tracing and, therefore, the scientific evidence supporting the use of automatic landmarking is low.

Keywords: Accuracy, Analysis, Automatic, Cephalogram Analysis, Cephalometry, Citation, Computer-Assisted, Craniofacial Landmarks, Databases, Error, ISI, Landmark Identification, Literature, Localization, Methods, Points, Radiographs, Recognition, Reliability, Review, Reviewing, Science, Science Citation Index, Strategy, Success, Survey, Systematic, Systematic Review, Web of Science

? Korayem, M., Flores-Mir, C., Nassar, U. and Olfert, K. (2008), Implant site development by orthodontic extrusion: A systematic review. *Angle Orthodontist*, **78** (4), 752-760.

Abstract: Objective: To determine the effectiveness of orthodontic extrusion of nonrestorable teeth prior to implant placement for improving the alveolar bone and gingival characteristics of implant recipient sites. Materials and Methods: Electronic database searches of the following databases were conducted with the help of a senior health sciences librarian: Medline, PUBMED, EMBASE, Scopus, Web of Science, and CINAHL Plus. Hand searches of the reference lists of selected articles were also conducted. Abstracts that appeared to fulfill the initial selection criteria were selected for full article retrieval. Retrieved articles were then carefully evaluated, and more specific selection criteria were applied. The authors conducted the selection processes independently, and any differences were resolved through discussion. An analysis of timing, type, and magnitude of forces applied was sought. Results: Eighteen articles were considered for review. Most of the selected articles were case reports or case series describing orthodontic extrusion of periodontally hopeless maxillary anterior teeth. The results of the reported cases were evaluated individually and collectively with regard to various hard and soft tissue implant site characteristics. Clinically significant gains in alveolar bone and gingival tissue were reported in all cases, resulting in significant quantitative and qualitative improvements in the implant sites. Conclusions: Based on the available literature, orthodontic extrusion of nonrestorable teeth prior to implant placement appears to be a viable alternative to conventional surgical augmentative procedures in implant site development. No direct comparison to any other method was found, and therefore no conclusion could be made about its relative efficacy.

Keywords: analysis, authors, bone, case reports, case series, databases, development, effectiveness, efficacy, EMBASE, FORCED ERUPTION, health sciences, implant site, literature, Methods, orthodontic extrusion, PUBMED, quantitative, review, Science, sciences, Scopus, soft tissue, surgical, systematic, systematic review, Web of Science

? Ehsani, S., Mandich, M.A., El-Bialy, T.H. and Flores-Mir, C. (2009), Frictional resistance in self-ligating orthodontic brackets and conventionally ligated brackets. *Angle Orthodontist*, **79** (3), 592-601.

Abstract: Objective: To compare the amount of expressed frictional resistance between orthodontic self-ligating brackets and conventionally ligated brackets in vitro as reported in the literature. Methods: Several electronic databases (Medline, PUBMED, EMBASE, Cochrane Library, and Web of Science) were searched without limits. In vitro studies that addressed friction of self-ligating brackets compared with conventionally ligated brackets were selected and reviewed. In addition, a search was performed by going through the reference lists of the selected articles to identify any paper that could have been missed by the electronic searches. Results: A total of 70 papers from the electronic database searches and 3 papers from the secondary search were initially obtained. After applying the selection criteria, only 19 papers were included in this review. A wide range of methods were applied. Conclusions: Compared with conventional brackets, self-ligating brackets produce lower friction when coupled with small round archwires in the absence of tipping and/or torque in an ideally aligned arch. Sufficient evidence was not found to claim that with large rectangular wires, in the presence of tipping and/or torque and in arches with considerable malocclusion, self-ligating brackets produce lower friction compared with conventional brackets. (Angle Orthod. 2009;79: 592-601.).

Keywords: 4 Alloys, Archwire Combinations, Brackets, Ceramic Brackets, Cochrane, Databases, Edgewise Brackets, Elastomeric Ligatures, Forces, Friction, In Vitro, In-Vitro, Literature, Methods, Papers, PUBMED, Resistance, Review, Science, Self-Ligation, Sliding Mechanics, Stainless-Steel, Systematic Review, Web of Science, Wire Combinations

? Leonardi, R., Annunziata, A., Licciardello, V. and Barbato, E. (2010), Soft tissue changes following the extraction of premolars in nongrowing patients with bimaxillary protrusion. *Angle Orthodontist*, **80** (1), 211-216.

Full Text: [2010\Ang Ort80, 211.pdf](2010/Ang%20Ort80,%20211.pdf)

Abstract: Objective: To quantify the amount of perioral tissue changes following the extraction of four premolars in patients with bimaxillary protrusion who had nearly completed active growth. Materials and Methods: A literature search was conducted to identify clinical trials that assessed cephalometric perioral soft tissue changes in patients affected by biprotrusion and treated with extractions. Electronic databases (PubMed, ISI WoS Science Citation Index Expanded, and HubMed) were searched. Abstracts that appeared to fulfill the initial selection criteria were selected, and the full-text original articles were retrieved and analyzed. Only articles that fulfilled the final selection criteria were finally considered. Their references were also hand-searched for possible missing articles from the database searches. Results: Nine abstracts met the initial inclusion criteria and these articles were retrieved. From these, five were later rejected mostly because the sample dealt with growing subjects. Four articles remained and they showed that the upper and lower lips retracted and the nasolabial angle increased following premolar extraction. Upper lip retraction ranged from 2 mm to 3.2 mm, lower lip retraction ranged from 2 mm to 4.5 mm. Conclusions: The lip procumbency improves following the extraction of four premolars and this improvement is predictable. However, the changes are small and do not dramatically modify the profile. A “dished in” profile is not to be expected. Individual variation in response is large. (Angle Orthod 2010;80:211-216.).

Keywords: African-American Patients, Articles, Bimaxillary, Changes Concurrent, Citation, Database, Databases, Extraction, Growth Changes, Incisor Retraction, ISI, Literature, Matched Samples, Orthodontic Treatment, Premolars, Profile, Profile Changes, Protrusion, Science, Science Citation Index, Tooth Retraction

? Janson, G., Branco, N.C., Fernandes, T.M.F., Sathler, R., Garib, D. and Lauris, J.R.P. (2011), Influence of orthodontic treatment, midline position, buccal corridor and smile arc on smile attractiveness: A systematic review. *Angle Orthodontist*, **81** (1), 153-161.

Abstract: Objective: To assess the scientific evidence of the influence of some variables on smile attractiveness: orthodontic treatment, midline position, axial midline angulation, buccal corridor, and smile arc. Materials and Methods: Literature was searched through PUBMED, Web of Science, EMBASE, and All EBM Reviews. The inclusion criteria consisted of studies written in English; published in the past three decades; concerning the influence of orthodontic treatment, midline position, axial midline angulation, buccal corridor, and smile arc on smile esthetics; and judged by a minimum of 10 raters. Quality features evaluated were adequate description of samples, absence of confounding factors, and description of methods used to evaluate the smiles and statistical analyses. Results: Initially, 203 articles were retrieved. of these, 20 abstracts met the initial inclusion criteria and were selected. Thirteen articles were classified as high quality, seven as average, and none as low quality. Conclusion: Four-premolar extraction or nonextraction treatment protocols seem to have no predictable effect on overall smile esthetics, meaning that if well indicated, extraction in orthodontics does not necessarily have a deleterious effect on facial esthetics. The selected articles recommend that a small dental midline deviation of 2.2 mm can be considered acceptable by both orthodontists and laypeople, whereas an axial midline angulation of 10 degrees (2 mm measured from the midline papilla and the incisal edges of the incisors) is already very apparent, and considering studies dealing with real smiles, buccal corridor sizes and smile arc alone do not seem to affect smile attractiveness. (Angle Orthod. 2011;81:153-161.).

Keywords: Confounding, Dental Aesthetics, Discrepancies, Esthetics, Extraction, Impact, Laypersons, Methods, Orthodontics, Perception, PUBMED, Quality, Ratings, Review, Science, Space, Statistical, Systematic, Systematic Review, Treatment, Web of Science

# Title: Animal Breeding Abstracts

Full Journal Title: Animal Breeding Abstracts

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0003-3499

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: TTopic

? Russell, J. and Galina, C. (1987), Research and publishing trends in cattle reproduction in the tropics: Part 2. A Third World prerogative. *Animal Breeding Abstracts*, **55** (11), 819-828.

Abstract: A bibliometric analysis of documents published on the subject of cattle reproduction in the tropics, and indexed in the CAB Abstracts database, showed a marked participation of the Third World in this field of research. A small number of these studies reached the mainstream scientific literature, as publication occurrred to a large extent through national journals, as well as in non-conventional document formats, particularly conference proceedings and theses. Devoloping countries showed a notable preference for publishing in their native language. The main obstacle limiting the world-wide dissemination of Third World research appears to be the difficulties involved in distributing copies of documents published in these regions, as well as language barriers restricting the assimilation and use of the information they contain.

Keywords: Analysis, Barriers, Bibliometric, Bibliometric Analysis, Cattle, Database, Field, Information, Journals, Literature, Participation, Preference, Publication, Publishing, Reproduction, Research, Scientific Literature, Small, Trends

# Title: Annalen der Physik

Annalen der Physik und Chemie 1824-1899

Full Journal Title: [Annalen der Physik](http://www3.interscience.wiley.com/journal/5006612/toc); [Annalen der Physik](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1521-3889/issues)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0003-3804

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

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Subject Categories:

: Impact Factor 1.844

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Full Text: [-1959\Ann Phy Che218, 497.pdf](-1959/Ann%20Phy%20Che218,%20497.pdf)

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Full Text: [-1959\Ann Phy Che298, 644.pdf](-1959/Ann%20Phy%20Che298,%20644.pdf)

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Full Text: [-1959\Ann Phy Che298, 644.pdf](-1959/Ann%20Phy%20Che298,%20644.pdf)

Abstract: Up till now no simple relationship has been discovered between the amount of gas absorbed by a liquid and the temperature. In the present paper, by comparing the experimental results of Winkler, Timofejew, Bohr and Bock, Carius and Bunsen, the author has shown that the formula alpha (T ~ /b n/) = kappa is closely satisfied between certain temperature limits. Here alpha is the volume of gas, measured at N.T.P., absorbed by 100 c.c. of liquid at the absolute temperature T; kappa and /b n/ are constants which vary with the gases. The agreement between the numbers calculated for alpha from this formula and those obtained by experiment is very close up to about 50° -60°C., at which point the curve expressing alpha T as a function of alpha bends considerably away from the straight-line form which it maintains up to that point. With the gases H, N, CO, NO, and O the square root of the molecular weight is a straight-line function of the constant /b n/, the relation being expressed by the equation radic (M) = /b n/.0.04968~6.286.

Keywords: Temperature

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Full Text: [-1959\Ann Phy Che299, 545.pdf](-1959/Ann%20Phy%20Che299,%20545.pdf)

Abstract: This investigation was undertaken with a view to discover the cause of contact electricity, and the paper has this for its title. It contains tables giving the results of experiments on the absorption of gases by mercury and by a large number of amalgams, but most experiments were made with zinc amalgam. The mercury and amalgams were caused to flow through a fine nozzle in the bottom of one vessel, then drop through an atmosphere of the gas into another vessel. The whole apparatus was enclosed so that the same atmosphere filled both vessels, and the absorption was measured by the loss of gas in this atmosphere as registered on a manometer. Only oxygen and water-vapour seem to be absorbed. The absorption is independent of the strength of the amalgam and of the pressure of oxygen.

Keywords: Absorption, Mercury

? Hagenbach, A. (1898), Ueber diffusion von gasen durch wasserhaltige gelatine. *Annalen der Physik und Chemie*, **301** (8), 673-706.

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Full Text: [-1959\Ann Phy Che301, 673.pdf](-1959/Ann%20Phy%20Che301,%20673.pdf)

Abstract: Various gases are enclosed in a vessel under constant pressure which is separated from another vessel by a wooden plate containing a large number of holes filled with gelatine. The transfusion through the gelatine is used for determining the coefficients of diffusion of the gases. The amount in c.c. of the various gases traversing in one day a cube of 20 per cent. gelatine is 0.845 in the case of CO/sub 2/, 0.509 for N/sub 2/O, 0.0565 for H, 0.230 for O, and 1271 for ammonia, at 17 degrees C. The vapour-tension of gelatine is about the same as that of water. The absorption of gases in gelatine is hardly different from that in water, but the diffusion-coefficients are smaller in gelatine. Exner’s rule, according to which the volumes of gases exchanged are as the absorption-coefficients, and inversely proportional to the square roots of their densities, is only approximately verified.

Keywords: Absorption, Diffusion, Water

? Mülfarth, P. (1900), Ueber adsorption von gasen an glaspulver. *Annalen der Physik*, **308** (10), 328-352.

Full Text: [-1959\Ann Phy308, 328.pdf](-1959/Ann%20Phy308,%20328.pdf)

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Full Text: [-1959\Ann Phy308, 328.pdf](-1959/Ann%20Phy308,%20328.pdf)

Abstract: Considerable quantities of CO/sub 2/ are adsorbed even by perfectly dry glass powder. The adsorption increases with falling temperature and with increasing pressure. It reaches a limit in one or two hours. The adsorption is delayed by moisture, but is completed in a few days. The quantities adsorbed are not even approximately as large as they should be according to Bunsen’s experiments with glass threads. The following is the series of gases examined, arranged in the order of increasing adsorption: C/sub 2/H/sub 2/, N/sub 2/O, CO/sub 2/, SO/sub 2/, and NH/sub 3/. Bunsen’s “capillary absorption” does not hold good for glass powder. Henry’s law of absorption holds very approximately good for the adsorption of gases by glass powder.

Keywords: Absorption, Adsorption, Temperature

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Keywords: Isotherms

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Keywords: Complete, Thermodynamic

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Keywords: Equilibrium, Kinetic, Thermodynamics

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Full Text: [-1959\Ann Phy315, 830.pdf](-1959/Ann%20Phy315,%20830.pdf)

Abstract: The author describes a number of experiments made with a modified form of Salvioni’s micro-balance, which consists of a fine glass thread fixed at one end and loaded at the other, the load being measured by the deflection of the beam, read off by means of a microscope [see Abstract No. 1902A01986]. Such a balance, by means of which weights as small as 0.001 mg may be accurately estimated, is especially suitable for the determination of the specific gravity of gases, the measurement of the weight of water vapour condensed on the surface of solid bodies, and the study of the adsorption of gases.

Keywords: Adsorption, Measurement, Water

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Keywords: Thermodynamics

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Keywords: Isotherms, Water

Notes: highly cited

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Keywords: Kinetic, Theory

Notes: highly cited

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Keywords: Energy, NOV

Notes: highky cited

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Keywords: Theory

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Keywords: Production

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Notes: highly cited

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Keywords: Radiation, Theory

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Keywords: Equilibrium, Thermodynamic

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Full Text: [-1959\Ann Phy328, 84.pdf](-1959/Ann%20Phy328,%2084.pdf)

Abstract: The capacity for condensing gases at the surface belongs mainly to porous bodies. An enormous increase of the adsorption at low temperatures is found in charcoal, but nowhere else. Palladium shows no increase of absorption when immersed in liquid air. The density of the gas and the carbon are the decisive factors in the adsorption of gases. Charcoal powder shows less adsorption than the solid material. The lighter the carbon, the more rapidly is the adsorption completed. Charcoal prepared from elder pith takes up nitrogen as easily as cocoanut charcoal absorbs hydrogen. Adsorption, as a rule, is most rapid in the lightest charcoal and for the lightest gases. As regards the initial state of the carbon, no complete elimination of the original gases is as yet feasible. Gases are given off on heating even beyond 500°C. All that can be done at present is to note the adsorption after maintaining the temperature for some time at any given point. There is a probability that all gases are adsorbed to the same extent at their boiling-points by the same kind of charcoal. The amount so adsorbed is 240 c.cm. in the case of cocoanut charcoal, and 300 c.cm. in the case of elder-pith charcoal.

Keywords: Absorption, Adsorption, Carbon, Temperature

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Full Text: [-1959\Ann Phy338, 431.pdf](-1959/Ann%20Phy338,%20431.pdf)

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Full Text: [-1959\Ann Phy338, 431.pdf](-1959/Ann%20Phy338,%20431.pdf)

Abstract: The author considers that the charges observed by A. Schmauss cannot be explained by the assumption of a unipolar picking-up of ions from the supply of ions in the space through which the fall takes place: (1) Because they are considerably greater than the charges of all the existing ions in the space considered which can be taken into account; (2) Because they are also observed when there is present in the region of fall only the very small ionic density of the free air space; (3) Because they are independent of the material and the nature of the surface of the tip of the drop. A thoroughly satisfactory explanation is afforded if these charges are considered as being due to a modification of the water-dropper effect.

Keywords: Modification

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Keywords: Analysis

Notes: highly cited

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Keywords: Liquid

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Keywords: Thermodynamics

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Keywords: Bodies

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Keywords: Dispersion, Force

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Full Text: [-1959\Ann Phy342, 233.pdf](-1959/Ann%20Phy342,%20233.pdf)

Abstract: The thermal conductivity of gases only possesses at medium pressures a constant value independent of the pressure. At small pressures a diminution of the transport of heat occurs, which decreases with lowering of the pressure of the gas. Smoluchowski’s investigations have shown that the irregularities may be explained by assuming that at the boundary between the wall of the vessel and the gas a difference of temperature is produced which can be expressed by the equation thetas ‘- thetas = gamma . d thetas /dn, where thetas ‘ is the temperature of the wall, thetas that of the gas, d thetas /dn the temperature gradient at the boundary between metal and gas and gamma the so-called “temperature-jump-coefficient,” /b i.e.,/ a magnitude which can be expressed by the equation gamma = alpha . 760//b p/, where /b p/ is the gas pressure in mm. and alpha a characteristic constant for each gas. Various researches on the distribution of temperature in the immediate neighbourhood of the solid wall have been made by the method of cooling and otherwise, and the author has investigated this distribution by means of thermoelectric sounds and applied his method to find the thermal conductivity of air, hydrogen, and CO/sub 2/. From numerous observations the author concludes that gamma for a given gas pressure is not a constant magnitude; it depends on the adsorption of the gas at the metal walls, and therefore varies within certain limits. The value of gamma which expresses the discontinuity of temperature at the boundary of metal and gas was calculated from measurements of the temperature gradient within the heat-conducting layer of gas near the boundary, and agrees numerically within limits of errors of observation with the values found by Smoluchowski by the method of cooling. The measurements show that this discontinuity of temperature occurs in the layer of gas close to the solid wall, and depends on a continuous decrease of the coefficient of thermal conductivity in the same. The thickness of this transition layer is of the same order of magnitude as the mean free path of the gas molecules.

Keywords: Adsorption, Metal, Temperature, Transport

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Keywords: Thermodynamic

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Full Text: [-1959\Ann Phy347, 45.pdf](-1959/Ann%20Phy347,%2045.pdf)

Abstract: A. Schmauss found [Abstract No. 1903A00460] that water-drops falling through gases ionised by Rontgen rays adsorbed negative ions much more freely than positive. This was explained as being due to the higher mobility of the negative ions. R. Seeliger [Abstract No. 1910A00710] working with continuous Rontgen radiation obtained a far smaller excess of negative ions adsorbed. Repeating Seeliger’s experiments, but protecting the falling drops from Rontgen rays, the author obtains an intermediate ratio for uncharged droplets. The power of adsorption seemed to increase with the dielectric constant. With droplets equally and oppositely charged the number of adsorbed ions corresponds to the ratio of the mobilities of the ions attracted. Direct tests of the adsorbability of ions by falling steel balls showed ultimately that the adsorption is directly proportional to the mobility. Causes of divergence from this result are discussed.

Keywords: Adsorption, Mobility

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Keywords: Germany

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Keywords: General, Theory

Notes: highly cited

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Full Text: [2006\Ann Phy15, 461.pdf](2006/Ann%20Phy15,%20461.pdf)

Abstract: In this study the long-term impact of the works of Paul Drude has been analyzed by bibliometric methods. His overall citation impact and rank within the pre-1910 authors in chemistry and physics has been determined. The time-dependent number of mentions of his name. the overall citation impact and the citation numbers of single articles and books have been investigated. The impact time curves of his most frequently cited articles and books are presented and discussed. The scientific contributions of the most influential Drude works for solid state physics are analyzed. in particular their impact oil recent research. (C) 2006 WILEY-VCH VCH GmbH & Co. KGaA. Weinheim.

Keywords: Bibliometric, Bibliometric Indicators, Citations, CO, Course, Data, Dating, H Index, h-Index, Hirsch, Hirsch Index, History of Science, Impact Analysis, Index, Indicators, Informal, Informal Citations, Investigations, Journal, Journal Articles, Journals, Methodology, Policy, Presentation, Qualitative, Science, Science Citation Index, Science Policy, Web of Science

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Full Text: [2007\Ann Phy16, 640.pdf](2007/Ann%20Phy16,%20640.pdf)

Abstract: The h index was introduced by Hirsch to quantify an individual’s scientific research output. It has been widely used in different fields to show the relevance of the research work of prominent scientists. I have worked out 26 practical cases of physicists which are not so prominent. Therefore this case study should be more relevant to discuss various features of the Hirsch index which are interesting or disturbing or both for the more average situation. In particular, I investigate quantitatively some pitfalls in the evaluation and the influence of self-citations.

Keywords: Case Study, Citation, Citation Analysis, Evaluation, h Index, h-Index, Hirsch Index, Relevance, Research, Research Work, Researchers, Science, Scientific Research, Scientists, Self-Citations, Work

? Cardona, M., Chamberlin, R.V. and Marx, W. (2007), The history of the stretched exponential function. *Annalen der Physik*, **16** (12), 842-845.

Full Text: [2007\Ann Phy16, 842.pdf](2007/Ann%20Phy16,%20842.pdf)

Keywords: Citation Analysis, Decay, Function, History, History of Physics, Relaxation, Stretched Exponential

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Full Text: [2008\Ann Phy17, 497.pdf](2008/Ann%20Phy17,%20497.pdf)

Abstract: After a presentation of Max Born’s most salient biographical data, we discuss his contributions to science and science policy, with special emphasis on those related to condensed matter physics. Our discussion includes journal articles as well as books. The methodology used is both qualitative and quantitative, including number of items, number of formal and informal citations, and other bibliometric indicators such as the recently proposed Hirsch index (h-index). The data are mainly based on the Thomson/ISI Web of Science (WoS) which covers a carefully selected set of the more prestigious journals dating back to 1900. Born’s books and articles not published in the journals covered by the WoS can also be evaluated, provided they are cited within the WoS journals. Some anecdotic and historical details, which have come to the fore in the course of our bibliometric investigations, are included. (C) 2008 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

Keywords: Bibliometric, Bibliometric Indicators, Citations, Course, Data, h Index, h-Index, Hirsch, Hirsch Index, History of Science, Impact Analysis, Index, Indicators, Informal Citations, Investigations, Journal, Journal Articles, Journals, Methodology, Policy, Presentation, Qualitative, Science, Science Citation Index, Science Policy, Web of Science

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Full Text: [2009\Ann Phy18, 198.pdf](2009/Ann%20Phy18,%20198.pdf)

Abstract: We discuss the scientific impact of Latin American scientists in the field of materials science. The analysis is based on the h-index as the scientometric index used to quantify the scientific productivity of an individual. In particular, we focus our analysis in Mexico, Chile and Colombia. We compare the level of productivity between all these countries. We also analyzed the h-index as function of the biological age, by using the first year of publication of a given scientists as a reference and discussed the general distribution of its quantification. We do not find a clear relationship between these two quantities. Based in our results we propose some political measures that these countries could implement to improve productivity as well as scientific development in this field. (C) 2009 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim

Keywords: h-Index, Bibliometric Indices, Research Evaluation, Field Scientific Performance, Hirsch-Index, Bibliometric Indicators

? Schreiber, M. (2009), The influence of self-citation corrections and the fractionalised counting of multi-authored manuscripts on the Hirsch index. *Annalen der Physik*, **18** (9), 607-621.

Full Text: [2009\Ann Phy18, 607.pdf](2009/Ann%20Phy18,%20607.pdf)

Abstract: The Hirsch index or h-index is widely used to quantify the impact of an individual’s scientific research output, determining the highest number h of a scientist’s papers that received at least h citations. Fractionalised counting of the publications is an appropriate way to distribute the impact of a paper among all the coauthors of a multi-authored manuscript in an easy way, leading to a simple modification h(m) of the h-index. On the other hand the exclusion of self-citations allows one to sharpen the index, what is appropriate, because self-citations are usually not reflecting the significance of a publication. I have previously analysed the citation records of 26 physicists discussing the sharpened index h(s) as well as the modification h(m) of the original h-index. In the present investigation I combine these two procedures yielding the modified sharpened index h(ms). For a better comparison, interpolated indices are utilized. The correlations between the indices are rather strong, but nevertheless the positions of some datasets change, in a few cases significantly, depending on whether they are put into order according to the values of h, h(m), h(s), or h(ms). This leads to the conclusion that the additional effort in determining the modified sharpened index h(ms) is worth performing in order to obtain a fairer evaluation of the citation records. (C) 2009 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

Keywords: Citation, Citation Analysis, Citations, Coauthors, Evaluation, h Index, h-Index, Hirsch Index, Physicists, Publication, Publications, Research, Research Output, Self-Citations

? Schreiber, M. (2010), Twenty Hirsch index variants and other indicators giving more or less preference to highly cited papers. *Annalen der Physik*, **522** (8), 536-554.

Full Text: [2010\Ann Phy522, 536.pdf](2010/Ann%20Phy522,%20536.pdf)

Abstract: The Hirsch index or h-index is widely used to quantify the impact of an individual’s scientific research output, determining the highest number h of a scientist’s papers that received at least it citations. Several variants of the index have been proposed in order to give more or less preference to highly cited papers. I analyse the citation records of 26 physicists discussing various suggestions, in particular A, e, f, g, h(2), h(w), h(T), h, m, pi, R, s, t, w, and maxprod. The total number of all and of all cited publications as well as the highest and the average number of citations are also compared. Advantages and disadvantages of these indices and indicators are discussed. Correlation coefficients are determined quantifying which indices and indicators yield similar and which yield more deviating rankings of the 26 datasets. For 6 datasets the determination of the indices and indicators is visualized. (C) 2010 WILEY-VCH Verlag GmbH & Co. KGaA. Weinheim.

Keywords: Citation, Citation Analysis, Citations, Correlation, Economics, g Index, h Index, h-Index, Hirsch Index, Ireland, Output, Papers, Physicists, Publications, R-Index, Research, Research Output, Sciences, Scientific Impact, Scientific Research

? Romero, A.H., Kremer, R.K. and Marx, W. (2011), The scientific road of Manuel Cardona: A bibliometric analysis. *Annalen der Physik*, **523** (1-2), 179-190.

Full Text: [2011\Ann Phy523, 179.pdf](2011/Ann%20Phy523,%20179.pdf)

Abstract: We present a detailed bibliometric analysis of the scientific contributions of Manuel Cardona, who represents an interesting example of a renowned scientist with a long and fruitful career. His publications provide an appropriate basis to apply various bibliometric techniques to measure the impact of his scientific achievements. For this purpose, we have taken into account his full publication record, the institutions of all his coauthors, the journals where his papers have been published, and the citations of his papers as a measure of their impact. We have analyzed in more detail some of his most important publications, which appeared as journal papers and book contributions. Additionally, we have broken down the complete ensemble of the citing papers with respect to the countries of authors, the journals, and the subject areas. The analysis performed in this study also makes use of the Hirsch index as one of the most recognized bibliometric indicators which has rapidly captured the field of research evaluation. Finally, we have established the citation historiogram based on the most highly-cited papers to visualize their citation network. (C) 2011 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim.

Keywords: Analysis, Authors, Bibliometric, Bibliometric Analysis, Bibliometric Indicators, Bibliometric Techniques, Citation, Citation Network, Citations, Co, Evaluation, Field, h Index, h-Index, Hirsch, Hirsch Index, Hirsch Index, Impact, Index, Indicators, Institutions, Journal, Journals, Manuel Cardona, Measure, Network, Papers, Publication, Publication Record, Publications, Purpose, Record, Research, Research Evaluation, Road, Scientific Impact, SI, Techniques

# Title: Annales Agronomiques

Full Journal Title: [Annales Agronomiques](http://annagro.free.fr/)

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? Calvet, R., Terce, M. and Arvieu, J.C. (1980), Bibliographical review - adsorption of pesticides by the soils and their constituents. 1. Description of the adsorption phenomenon. *Annales Agronomiques*, **31** (1), 33-62.

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# Title: Annales de Chimie-Science des Matériaux

Full Journal Title: [Annales de Chimie-Science des Matériaux](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6114&_auth=y&_acct=C000053193&_version=1&_urlVersion=0&_userid=1495547&md5=ecef9acf072ab38e48964ab0e5f35981)

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Publisher Address:

Subject Categories:

: Impact Factor

? Oukili, O., Chaouch, M., Rafiq, M., Hadji, M., Hamdi, M. and Benlemlih, M. (2001), Bleaching of olive mill wastewater by clay in the presence of hydrogen peroxide. *Annales de Chimie-Science des Matériaux*, **26** (2), 45-53.

Full Text: [2001\Ann Chi-Sci Mat26, 45.pdf](2001/Ann%20Chi-Sci%20Mat26,%2045.pdf)

Abstract: Treatment of olive mill wastewater (OMW) with clayey soils in the presence of hydrogen peroxide (H2O2) allows the elimination of phenolic compounds responsible for the black-brownish color of this industrial effluent. The aim of this research was to define optimal physicochemical parameters for the bleaching of OMW with clay in the presence of hydrogen peroxide. Two clayey soil powders were tested (A and B) and the results obtained indicate that high bleaching could be reached after 24 hours exposure of OMW to 7% (W/V) clay material A in the presence of 0.5% (VN) hydrogen peroxide. Under these conditions, the bleaching led to about 87% decrease of polyphenols (PF) and a 66% decrease of the Chemical Oxygen Demand (COD). The structure of clay and its concentration in iron salts have an effective adsorbent and catalytic effect on the removal of the majority of polyphenols.

? Belmouden, M., Assabbane, A. and Ichou, Y.A. (2001), Removal of 2.4-dichloro phenoxyacetic acid from aqueous solution by adsorption on activated carbon. A kinetic study. *Annales de Chimie-Science des Matériaux*, **26** (2), 79-85.

Full Text: [2001\Ann Chi-Sci Mat26, 79.pdf](2001/Ann%20Chi-Sci%20Mat26,%2079.pdf)

Abstract: The sorption of 2.4-dichloro phenoxyacetic acid (2.4-D) on two different activated carbons was determined using the batch equilibration technique. The calculated slopes of the Freundlich sorption isotherms were significantly less than 1. The (K) values were higher for the activated carbon which has the higher specific surface, and increased with NaCl concentration. The rate of attaining equilibrium of 2.4-D increased with a decrease in adsorbent concentration. Dynamic modelling of the adsorption showed that a first order reversible kinetic model was followed for the adsorption process. The overall rate constant K’, the adsorption rate K-1, the desorption rate constant K-2, and the equilibrium constant K-c for the adsorption process were calculated.

Keywords: 2,4-Dichlorophenoxyacetic Acid, Activated Carbon, Activated Carbons, Adsorbent, Adsorption, Adsorption Rate, Aqueous Solution, Carbon, Desorption, Equilibration, Equilibrium, First, France, Freundlich, Isotherms, Kinetic, Kinetic Model, Kinetic Study, Model, Modelling, Morocco, NaCl, Rate Constant, Removal, Solution, Sorption, Sorption Isotherms, Specific Surface

# Title: Annales de Chirurgie

Full Journal Title: [Annales de Chirurgie](http://sdos.ejournal.ascc.net/cgi-bin/sciserv.pl?collection=journals&journal=00033944)

ISO Abbreviated Title: Ann. Chir.

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Journal Country/Territory: France

Language: French

Publisher: Editions Scientifiques Medicales Elsevier

Publisher Address: 23 Rue Linois, 75724 Paris Cedex 15, France

Subject Categories:

Surgery: Impact Factor 0.602, / (2001)

? Pocard, M. (1998), The impact factor of medical journals: Salomon’s judgement or the dance of the seven veils? *Annales de Chirurgie*, **52** (7), 595-597.

Full Text: Ann Chi52, 595.pdf

Keywords: Bibliometric, Classification, Impact, Journals, Periodical, Standards

? Pocard, M. (2001), The impact factor or in publishing is it necessary to choose between The Orthopedic Surgery Review and the impact factor? *Annales de Chirurgie*, **126** (9), 932-933.

Full Text: [2001\Ann Chi126, 932.pdf](2001/Ann%20Chi126,%20932.pdf)

Keywords: Impact, Impact Factor, Publishing

# Title: Annales de Dermatologie et de Venereologie

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Subject Categories:

: Impact Factor

? Lorette, G. (1995), What’s the future of French dermatological publications? *Annales de Dermatologie et de Venereologie*, **122** (11-12), 748-750.

Keywords: Publications

? Bolac, C., Orosco, A., Guillet, G., Quist, D. and Derancourt, L. (2009), Publication rate for oral presentations made at the Journees Dermatologiques de Paris meeting. *Annales de Dermatologie et de Venereologie*, 136 (1), 21-27.

Abstract: Background. - The fate of oral presentations presented at a dermatological meeting has not been assessed to date. Our aim was to determine the publication rate for oral presentations presented at the “Journees dermatologiques de Paris” (JDP) meeting in peer-reviewed journals. Our secondary goals were to identify factors associated with publication and to examine the consistency of reporting of research findings presented in the conference abstract and subsequent full publication. Methods. - Abstracts presented orally at the JDP 1999-2004 were identified in the book of congress abstracts. Two independent operatives performed a Medline search cross-referencing lead and last authors and keywords. Results. - The publication rate was 57.6% with mean time to publication of 20.3 months. The median impact factor was 2.8. Factors associated with subsequent publication were study topic (p=0.04 for oncotogy) and study type (p = 0.03 for fundamental research and p= 0.005 for randomized controlled trials). The congress abstracts and full-text publication differed primarily in terms of sample size and data given in the “Results” section. Discussion. - More than half of all abstracts presented orally at the JDP congress are subsequently published in journals with a median impact factor comparable to those seen for other scientific congresses for which similar analysis has been conducted. These results confirm the scientific quality of this particular congress, in addition to its vocation of continuous medical training. (C) 2009 Published by Elsevier Masson SAS.

Keywords: Abstracts, Analysis, Authors, Congress, Consistency, Controlled, Controlled Trials, Data, Dermatology, Factors, Fate, Goals, Impact, Impact Factor, Journals, Lead, Medical, Oral, Peer Reviewed Journals, Peer-Reviewed, Peer-Reviewed Journals, Period 2000-2004, Publication, Publication Rate, Quality, Quality of, Radiology, Randomized, Randomized Controlled Trials, Randomized Controlled-Trials, Reporting, Research, Sample Size, Search, Size, Society, Subsequent Publication, Surgeons, Time, Training, Transition

# Title: Annales Françaises d’Anesthésie et de Réanimation

Full Journal Title: [Annales Francaises d’Anesthesie et de Reanimation](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6122&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=b500c487b46cb031306bbde598659dee)

ISO Abbreviated Title: Ann. Fr. Anest. Reanim.

JCR Abbreviated Title: Ann Fr Anesth

ISSN: 0750-7658

Issues/Year: 6

Journal Country/Territory: France

Language: Multi-Language

Publisher: Editions Scientifiques Medicales Elsevier

Publisher Address: 23 Rue Linois, 75724 Paris Cedex 15, France

Subject Categories:

Anesthesiology: Impact Factor 0.424, /

Pinaud, M. and Otteni, J.C. (2000), Le «facteur d’impact» des revues d’anesthésie-réanimation: The «impact factor» of anaesthesia and intensive care journals. *Annales Françaises d’Anesthésie et de Réanimation*, **19** (6), 492-497.

Full Text: [2000\Ann Fra dAn Rea19, 492.pdf](2000/Ann%20Fra%20dAn%20Rea19,%20492.pdf)

Abstract: The «impact factor» (IF) of scientific journals is defined as the number of citations obtained over a one-year period of articles published during the two previous years in a journal, divided by the number of articles published in that journal during the preceding two years. The IF, initially devised as an indicator of the quality of a journal, is at present mainly considered as an indicator of the quality of an article contained in that journal. However the IF of a journal is not equivalent to the actual impact of an article. Therefore the IF is not an accurate tool for assessment of the scientific quality of the author of that article.

The IFs of journals published in English are significantly higher than the IFs of those in another language, mainly as English is the language used for international communication and as English speaking authors rarely cite articles published in another language. The IF of the journal of the French society for anaesthesiology and intensive care, the *Annales françaises d’anesthésie et de réanimation* (*Afar*), is about seven times below the IF of *Anesthesiology*, which has the highest IF in the category «*Anesthesiology*». From 1992 to 1998, the relative impact value of the *Afar* has increased by 429 %. However the absolute value remains low.

Keywords: Facteur D’impactmots-Clé: Impact Factor

Beye, M.D., Diouf, E., Kane, O., Ndoye, M.D., Seydi, A., Ndiaye, P.I. and Sall, B.K. (2003), Prise en charge de l’éclampsie grave en réanimation en milieu tropical africain. À propos de 28 cas: Intensive care management of 28 patients with severe eclampsia in a tropical African setting. *Annales Françaises d’Anesthésie et de Réanimation*, **22** (1), 25-29.

Full Text: [A\Ann Fra dAn Rea22, 25.pdf](A/Ann%20Fra%20dAn%20Rea22,%2025.pdf)

Abstract: *Objective –* To study the specific management problems of severe eclampsia under tropical latitudes.

*Study design –* A two years retrospective study in a University hospital in the tropics.

*Patients and Methods –* In all patients admitted for eclampsia between January 1997 et December 1999, the following parameters were studied: age, parity, interval between disease et admission, post-eclampsia Glasgow Coma Scale (GCS), time of occurrence of eclampsia during pregnancy, delivery route, blood pressure data at admission, the occurrence of complications at admission or during hospital stay.

*Results –* Twenty-eight mainly primiparous patients (mean age: 26 ±6) were admitted with an average delay of 8.5 ±10.2 hours after the first symptoms. The time of occurrence was prepartum in 6, perpartum in 14 and postpartum in 8 cases. All patients were hypertensive and comatose with an average GCS of 8 ±2.2. Twenty patients had been previously intubated and ventilated. Delivery was natural in 22 and by caesarean section in 6 patients. The following complications were found: acute oliguric renal failure (9), HELLP-syndrome (4), cerebral haemorrhage (4), acute lung oedema (3) and acute respiratory distress syndrome (1). Maternal and child mortality were 35 and 42.8% respectively.

*Conclusion –* Eclampsia is a major cause of both maternal and infantile mortality in developing countries. The authors insist that prevention and management require speedy transfers to adapted specialized obstetrical intensive care structures.

? Lienhart, A. (2011), Citation errors: Uplavici (for Hlava) and William the Silent (for Jules Verne and Mignet). *Annales Françaises d’Anesthésie et de Réanimation*, **30** (5), 429-431.

Full Text: [2011\Ann Fra dAn Rea30, 429.pdf](2011/Ann%20Fra%20dAn%20Rea30,%20429.pdf)

Abstract: A certain ‘O Uplavici’ was cited for more than fifty years, although he had never existed. This error probably came from a misinterpretation of the Czech language, in which the real author’s name - Hlava - can mean ‘Title’. It was finally recognized, which was not the case for the author of the sentence: I have no need of hope to take action, nor of success to persevere: it is still regularly attributed in France to William I, Prince of Orange, called the Silent. It is a mistake, and no serious reference certifies that an historical figure would have pronounced this sentence. It was written by the historian Mignet in 1841, to describe the character of William III, Prince of Orange and King of England. It was then used in 1875 by Jules Verne, to describe a character in The Mysterious Island. (C) 2011 Published by Elsevier Masson SAS.

Keywords: Citation, Documentations, England, History, Publications

# Title: Annales Historiques de la Revolution Francaise

Full Journal Title: Annales Historiques de la Révolution Francaise

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Laurentin, J. (2000), “Killing the father”: A tentative psycho-sociological approach to the mathematicians who succeeded Gaspard Monge. *Annales Historiques de la Révolution Francaise*, (320), 183-196.

Abstract: The interdisciplinarity sought by the workshop was fostered by a number of historians and sociologists specialising in the sciences. However, it is full of pitfalls which arouse passions and trigger dissension, exacerbated more often than not by the fear of compromising scientific authority. Mindful of these apprehensions, I would nonetheless wish to go beyond a strictly internal survey of the work of Gaspard Monge’s pupils, with a view to seeking in their relationships with the master, in the changes made to teaching practice, in a family romance disrupted by the Revolution, the rationale for a style and the choice of a whole range of mathematical research topics. This approach focusses on Michel-Ange Lancret and Charles-Julien Brianchon, two of the students most closely associated with Gaspard Monge by historical tradition. The manner in which they called into question his teaching will be highlighted and may help demonstrate that a study confined to their scientific treatises cannot fully account for the existence of an intellectual school. Some sociological and psychological indicators are briefly addressed, based on their own accounts and their scientific treatises, using the modern tools of scientometrics, in order to show that methodological relativism has a significant contribution to make, in the history of mathematics as well.

Keywords: Approach, Authority, Changes, Choice, Contribution, Family, Fear, History, Indicators, Interdisciplinarity, Mathematics, Practice, Psychological, Relationships, Research, School, Sciences, Scientometrics, Students, Style, Survey, Teaching, Tradition, Work

# Title: Annales de l’Institut Pasteur

Full Journal Title: [Annales de l’Institut Pasteur](http://sdos.ejournal.ascc.net/cgi-bin/sciserv.pl?collection=journals&journal=09244204)

ISO Abbreviated Title:

JCR Abbreviated Title: Ann Inst Pasteur

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Nicoli, J. (1969), Adsorption kinetics of an arbovirus on sensitized cells. *Annales de l’Institut Pasteur*, **117** (4), 579-??.

# Title: Annales Medicinae Experimentalis et Biologiae Fenniae

Full Journal Title: Annales Medicinae Experimentalis et Biologiae Fenniae

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Szorady, I., Vicsay, M., Obal, F., Tóth, J. and Pusztai, R. (1962), Examinations concerning effect of pantothenic acid on isolated intestine. *Annales Medicinae Experimentalis et Biologiae Fenniae*, **40** (3), 326-??.

# Title: Annali di Chimica

Full Journal Title: [Annali di Chimica](http://www3.interscience.wiley.com/cgi-bin/jtoc/107636969/)

ISO Abbreviated Title: Ann. Chim.

JCR Abbreviated Title: Ann Chim-Rome

ISSN: 0003-4592

Issues/Year: 6

Journal Country/Territory: Italy

Language: English

Publisher: Soc Chimica Italiana

Publisher Address: Viale Liegi 48, I-00198 Rome, Italy

Subject Categories:

Chemistry, Analytical: Impact Factor 0.394, 12/87 (2001)

Environmental Sciences: Impact Factor 0.714, 69/126 (1999); Impact Factor 0.413, 101/127 (2000); Impact Factor 0.394, / (2001)

? Wagner, V. and Pizzini, S. (1970), Microporosity analysis on zirconia base ceramics by argon adsorption method. 1. Determination of argon t isotherm. *Annali di Chimica*, **60** (3), 198-??.

Full Text: Ann Chi60, 198.pdf

? Beruto, D. and Merli, C. (1970), Nitrogen physical adsorption on silica-alumina heterogeneous surface - modification of BET equation. *Annali di Chimica*, **60** (8-9), 630-??.

Full Text: Ann Chi60, 630.pdf

? Antonacci, G., Goretti, G., Lagana, A. and Petronio, B.M. (1976), Adsorption of organic solutes from water by modified perlite. *Annali di Chimica*, **66** (7-8), 477-483

Full Text: Ann Chi66, 477.pdf

? Dondi, F., Betti, A., Blo, G. and Bighi, C. (1978), Comparison of liquid-chromatographic methods for isotherm determination on active carbons. *Annali di Chimica*, **68** (3-4), 293-301.

Full Text: Ann Chi68, 293.pdf

? Lepri, L., Desideri, P. and Del Bubba, M. (1997), Analysis of organic pollutants in a wastewater treatment plant. *Annali di Chimica*, **87** (5-6), 317-335.

Full Text: Ann Chi87, 317.pdf

Abstract: A comprehensive analytical method for the identification and quantitative determination of organic contaminants in domestic and industrial wastewater samples taken during the different phases of a treatment plant (Baciacavallo, Prate) is outlined. Liquid-liquid extraction (LLE) with n-hexane and liquid-solid extraction (LSE) on a RP-18 column for the recovery of a wide variety of dissolved compounds are evaluated. Organic extracts have been divided into four fractions of increasing polarity by adsorption on silica gel and analyzed using HPLC and HRGC-MS. The distribution of these contaminants between dissolved and particulate phases and their fate during the treatment process are discussed.

Keywords: Linear Alkylbenzenes Labs, Liquid-Chromatography, Domestic Wastes, Environment, Indicator, Water

? Ohta, K., Saruma, K., Kaneco, S., Suzuki, T., Itoh, S. and Begum, A. (2002), Preconcentration of trace silver with yeast for river water analysis. *Annali di Chimica*, **92** (5-6), 587-594.

Full Text: Ann Chi92, 587.pdf

Abstract: A new preconcentration method with yeast is presented. The method was evaluated for the determination of trace silver in river waters by graphite furnace atomic absorption spectrometry (GFAAS). A suitable cultivation bed for preconcentration of silver was 1.75 mg ml-1 2-ammonium hydrogen phosphate. The optimal cultivation time and temperature were 2h and 25degreesC. Under optimal conditions, silver in aqueous sample was concentrated to 6.9-fold by yeast. The detection limit was 4.6 pg ml-1 (3S/N) for silver in river water. The yeast preconcentration method was applied to the determination of silver in river waters. The recovery of spiked silver was in the range of 89 to 110%. By the preconcentration, it was found that ultra trace silver in river waters could be determined without interferences of matrix elements, after only the cultivation and with no chemical treatment.

Keywords: Furnace Atomic-Absorption, Spectrometry, Elements, Samples, Cadmium, Cd, Cu

? Dogan, C.E., Turhan, K., Akcin, G. and Aslan, A. (2006), Biosorption of Au(III) and Cu(II) from aqueous solution by a non-living *Cetraria islandica* (L) *Ach*. *Annali di Chimica*, **96** (3-4), 229-236.

Full Text: [2006\Ann Chi96, 229.pdf](2006/Ann%20Chi96,%20229.pdf)

Abstract: Biosorption of Au(III) and Cu(II) from dilute aqueous solutions was investigated by biomass of the non-living Cetraria islandica (L.) Ach. The removal and recovery of gold and copper were studied by applying batch technique. The experimental parameters such as the pH of the solution. contact time. the amount of Cetraria islandica (L.) Ach. (dried lichen). the concentration of metals on retention and eluents kind and amount have been investigated. Au(III) and Cu(II) were adsorbed on the dried lichen at pH 3 and pH 8, respectively. Quantitative retention (> 90%) was obtained within 60 minutes for metals. Maximum capacity of 1.0 2 of dried lichen for biosorption of Au(III) and Cu(II) were found as 7.4 mg of Au(III) and 19.2 mg of Cu(II). It was seen that the adsorption equilibrium data conformed well to the Langmuir model and Freundlich equation for Au(III) and only Freundlich equation for Cu(II). The method proposed in this study was applied to spiked mineral water analysis and metals adsorbed on the lichens were quantitatively (> 90%) recovered from mineral water samples by using 0.5 mol L-1 HCl.

Keywords: Artvin, Lichens, Regions, Turkey

? Ates, A., Yildiz, A., Yildiz, N. and Calimli, A. (2007), Heavy metal removal from aqueous solution by *Pseudevernia furfuracea* (L.) *Zopf*. *Annali di Chimica*, **97** (5-6), 385-393.

Full Text: [2007\Ann Chi97, 385.pdf](2007/Ann%20Chi97,%20385.pdf)

Abstract: The present study was carried out in a batch system using a lichen (Pseudevernia furfuracea (L.) Zopf) for the sorption of nickel(II) and copper(II) ions from water. Particularly, the effect of pH, contact time and temperature were considered. Pseudevernia furfuracea exhibited nickel(II) and copper(II) uptake of 49.87.and 60.83 mg/g at an initial pH of 4 and 5-6 at 35°C respectively. Both the Freundlich and Langmuir adsorption models were suitable for describing the biosorption of nickel(II) and copper(II) by the biosorbent. Biosorption showed pseudo first order rate kinetics for nickel and copper ions. Using the equilibrium constant values obtained at 25 and 35 T, the thermodynamics properties of the biosorption (ΔG°, ΔH° and ΔS°) were determined. The biosorption of nickel(II) and copper(II) onto Pseudevermajurfuracea was found to be endothermic.

Keywords: Adsorption, Aqueous Solution, Arrhizus, Biomass, Biosorbent, Biosorption, Chromium(VI), Copper, Copper(II), Copper(II) Ions, Cu(II), Endothermic, Equilibrium, First, Freundlich, Kinetics, Langmuir, Lichen, Mechanisms, Metal, Models, Nickel, Nickel(II), pH, Pseudo-First-Order, Rate Kinetics, Removal, Solution, Sorption, Temperature, Thermodynamics, Water

# Title: Annali dell’Istituto Superiore di Sanità

Full Journal Title: Annali dell’Istituto Superiore di Sanità

ISO Abbreviated Title: Ann. Ist. Super. Sanita.

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Zavaleta, J.O., Cantilli, R. and Ohanian, E.V. (1993), Drinking water health advisory program. *Annali dell’Istituto Superiore di Sanità*, **29** (2), 355-358.

Abstract: The US Environmental Protection Agency prepares Health Advisories (HA) for drinking water contaminants. The HA provide technical guidance to public health officials or other interested groups on many aspects concerning drinking water contamination. The HA contain information on the chemistry, health effects, analytical methods and treatment technologies for specific contaminants. In addition, the HA include a risk assessment section which provides concentrations of the contaminant in drinking water that are not anticipated to cause adverse, noncancer health effects for 1 or 10 days or for longer exposures. Because the HA include risk assessments for less than lifetime exposures, they are useful when accidental spills occur or when regulatory limits are temporarily exceeded. The guidance documents are updated when new information becomes available that would change the previous conclusions.

? Pirastu, R., Iavarone, I. and Comba, P. (1996), Bladder cancer: A selected review of the epidemiological literature. *Annali dell’Istituto Superiore di Sanità*, **32** (1), 3-20.

Abstract: The present contribution reviews the epidemiological literature on the risk factors for bladder cancer in humans, pointing to the new leads from the available knowledge and to suggestions on prevention and research needs. Smoking accounts for about 50% of bladder cancer cases in western countries, occupational exposures are second in importance in bladder cancer development. Exposure to aromatic amines in dyestuff manufacture, in the rubber and textile industry, occupations entailing exposure to paints and solvents, leather dust, inks, some metals, PAH, combustion products and diesel exhausts have been identified as risk factors from epidemiological studies. Other investigations have detected increased risk for bladder cancer in association with dietary factors, specifically fats and cholesterol, and with contamination of drinking water by chlorination by-products.

# Title: Annals of the Academy of Medicine, Singapore

Full Journal Title: Annals of the Academy of Medicine, Singapore

ISO Abbreviated Title: Ann. Acad. Med. Singapore

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Teo, C.S. (1984), Fluoridation of public water supplies in Singapore. *Annals of the Academy of Medicine, Singapore*, **13** (2), 247-251.

Abstract: Fluoridation of public water supplies as a means of reducing the prevalence of dental caries was introduced in Singapore in 1956. This paper will describe the fluoridation programme, and discuss its role in the prevention of dental decay. Water fluoridation has been advocated by the World Health Organisation in 1958 when the first report by an expert committee concluded that drinking water containing about 1 ppm. fluoride had a marked caries preventive action, and that controlled fluoridation of drinking water was a practicable and effective public health measure. Today, more than 60 countries serving over 330 million people have drinking water which is fluoridated. In Singapore, public water supplies contain 0.7 ppm. fluoride. The efficacy of this programme is reported in follow-up studies. After ten years, mean dmf/DMF reduction of 34.4% was recorded for seven-year old Chinese school children, and 33.6% for the same age group Malay school children. These results are consistent with world-wide studies which show beneficial reduction in carries level in children by 30-80%. Fluoridation of public water supplies is indicated if there is an efficient system of distribution and when there is a moderate-to-high prevalence of dental caries.

# Title: Annals Academy of Medicine Singapore

Full Journal Title: Annals Academy of Medicine Singapore

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0304-4602

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ha, T.C., Tan, S.B. and Soo, K.C. (2006), The journal impact factor: Too much of an impact? *Annals Academy of Medicine Singapore*, **35** (12), 911-916.

Abstract: Introduction: The journal impact factor is often used to judge the scientific quality of individual research articles and individual journals. Despite numerous reviews in the literature criticising such use, in some countries the impact factor has become an outcome measure for grant applications, job applications, promotions and bonuses. The aim of this review is to highlight the major issues involved with using the journal impact factor as a measure of research quality. Methods: A literature review of articles on journal impact factors, science citation index, and bibliometric methods was undertaken to identify relevant articles. Results: The journal impact factor is a quantitative measure based on the ratio between yearly citations in a particular journal to total citations in that journal in the previous 2 years. Its use as a criterion for measuring the quality of research is biased. The major sources of bias include database problems from the Institute for Scientific Information and research field effects. The journal impact factor, originally designed for purposes other than the individual evaluation of research quality, is a useful tool provided its interpretation is not extrapolated beyond its limits of validity. Conclusion: Research quality cannot be measured solely using the journal impact factor. The journal impact factor should be used with caution, and should not be the dominant or only factor determining research quality.

Keywords: Applications, Bias, Bibliometric, Bibliometric Methods, Citation, Citation Analysis, Citations, DEC, Effects, Evaluation, Impact, Impact Factor, Impact Factors, Index, Institute for Scientific Information, Journal, Journal Impact Factors, Journals, Literature Review, Methods, Outcome, Outcome Measure, Quality, Research, Research Articles, Research Quality, Review, Reviews, Science, Science Citation Index, Sources, Validity

# Title: Annals of Allergy

Full Journal Title: Annals of Allergy

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Sly, R.M. (1993), Another look at the most frequently cited articles from the *Annals of Allergy*. *Annals of Allergy*, **71** (1), 1-2.

# Title: Annals of Allergy Asthma & Immunology

Full Journal Title: Annals of Allergy Asthma & Immunology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Simons, F.E.R., Lieberman, P.L., Read, E.J. and Edwards, E.S. (2009), Hazards of unintentional injection of epinephrine from autoinjectors: A systematic review. *Annals of Allergy Asthma & Immunology*, **102** (4), 282-287.

Abstract: Objectives: To ascertain the rate of occurrence of unintentional injections from epinephrine autoinjectors used in the first aid treatment of anaphylaxis and to provide information about the resulting needle stick injuries. Data Sources: A systematic review was performed. The MEDLINE, Scirus, CINAHL, ISI Web of Science, and Google Scholar databases were searched by title and abstract to identify reports of unintentional injections from epinephrine autoinjectors published in peer-reviewed journals. Study Selection: Publications were selected for inclusion based on predefined strict criteria. Results: In 26 reports published during the past 20 years, we identified 69 people with an unintentional injection of epinephrine from an autoinjector. More than 68% of them were reported in the past 6.3 years, 58% were female, 42% were injured in the home, and 91% sustained injury to a finger or thumb. More than 65% of the 69 individuals were evaluated in an emergency department; 13% of the 69 were not treated or were treated only with observation. Warming of the injured part was used in 25%, nitroglycerin paste application in 9%, local injections of phentolamine and/or lidocaine in 22%, and other treatments in 20%; treatment, or lack thereof, was not described in 12%. No permanent sequelae were reported. Conclusions: The true rate of occurrence of unintentional injection of epinephrine from autoinjectors is unknown but is increasing. People at risk for anaphylaxis need regular coaching in how to use epinephrine autoinjectors correctly and safely. Improved autoinjector design will address the safety concerns identified in this review.

Keywords: Accidental Digital Injection, Adrenaline, Allergy, Anaphylaxis, Databases, Device, Emergency Department, Epipen, Finger, Google Scholar, Information, Injury, Ischemia, ISI, Journals, Management, Medline, Observation, Phentolamine, Publications, Review, Risk, Safety, Science, Sources, Systematic, Systematic Review, Treatment, Web of Science

# Title: The Annals of the American Academy of Political and Social Science

Full Journal Title: [The Annals of the American Academy of Political and Social Science](http://uk.jstor.org/journals/00027162.html); [The Annals of the American Academy of Political and Social Science](http://www.ingentaconnect.com/content/sage/ann)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Petrosino, A. (2003), Estimates of randomized controlled trials across six areas of childhood intervention: A bibliometric analysis. *The Annals of the American Academy of Political and Social Science*, **589** (1), 190-202.

Full Text: [2003\Ann Ame Aca Pol Soc Sci589, 190.pdf](2003/Ann%20Ame%20Aca%20Pol%20Soc%20Sci589,%20190.pdf)

Abstract: Data on the frequency of experiments are elusive. One way to estimate how many experiments are done is by analyzing the contents of bibliographic databases. This article analyzes the citation information from six major bibliographic databases to estimate the proportion of randomized (or possibly randomized) experiments compared to all outcome or impact evaluation studies. The focus of the article is on the evaluation of programs designed for children (from birth to eighteen years of age). The results indicate that randomized studies are used in nearly 70 percent of childhood interventions in health care but probably in 6 to 15 percent of kindergarten through twelfth-grade interventions in education and juvenile justice. The article concludes with discussion about these data, particularly on suggestions of how to produce more outcome studies, and randomized experiments, of childhood interventions.

Keywords: Randomized Experiments, Evaluation Studies: Programs for Children, Bibliometrics

# Title: Annals of Anatomy-Anatomischer Anzeiger

Full Journal Title: Annals of Anatomy-Anatomischer Anzeiger

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Halbach, O.V.U. (2011), How to judge a book by its cover? How useful are bibliometric indices for the evaluation of “scientific quality” or “scientific productivity”? *Annals of Anatomy-Anatomischer Anzeiger*, **193** (3), 191-196.

Full Text: [2011\Ann Ana93, 191.pdf](2011/Ann%20Ana93,%20191.pdf)

Abstract: How to pre-select the most promising candidates for an open position out of several applications? One of the possibilities is to check the personal bibliometric indices of these candidates by looking into appropriate databases. In these databases the number of publications, the total number of citations, the average number of citations per paper and the h-index are easy to find. Thus, it is easy to use these parameters for a pre-election. First, the particular values for the several bibliometric indicators could be retrieved for scientists working in the field of Anatomy & Cell Biology. Next, an analysis of how useful and reliable these bibliometric indicators are is performed. Most of the indicators strongly depend on the seniority of a researcher. Thus, these indicators favour older scientists over younger ones. Based on that, these indicators are not well-suited to identify young and promising scientists. Therefore, it is proposed that indicators, which correct for the time a scientists spends working in the field, may be better suited for such a pre-election, such as the hy index (also known as m-index) or the Py index. In this context, it should be emphasized that these indicators may be useful for pre-selection. All available indicators are based on data obtained from the past achievements of the scientists and may not predict their future achievements. However, despite the availability of these indicators, the best method to gain an impression of the quality is currently still the old-fashioned method of reading the papers. (C) 2011 Elsevier GmbH. All rights reserved.

Keywords: Bibliometric, Bibliometric Indicators, Bibliometric Indices, Bibliometrics, Citations, Databases, Evaluation, Germany, h Index, h-Index, h-Index, Impact Factors, M-Index, Papers, Publications

# Title: Annals of Applied Biology

Full Journal Title: [Annals of Applied Biology](http://www.blackwell-synergy.com/loi/aab); [Annals of Applied Biology](http://www.swetswise.com/eAccess/viewTitleIssues.do?titleID=11319)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0003-4746

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Eales, N.B. (1917), The life history and economy of the cheese mites. *Annals of Applied Biology*, **4** (1-2), 28-35.

# Title: Annals of Behavioral Medicine

Full Journal Title: [Annals of Behavioral Medicine](http://weblinks1.epnet.com/authHjafDetail.asp?tb=1&_ua=bo+B%5F+db+aphjnh+bt+TD++%22H5U%22+6A7D&_ug=sid+D020F96A%2DAC57%2D4E03%2D8BA6%2DDE1A1179EA90%40sessionmgr2+dbs+aph+187A&_us=hd+False+sm+ES+1C03&_uso=st%5B0+%2DTD++%22H5U%22+tg%5B0+%2D+db%5B0+%2Daph+op%25)

ISO Abbreviated Title: Ann. Behav. Med.

JCR Abbreviated Title: Ann Behav Med

ISSN: 0883-6612

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Soc Behavioral Medicine

Publisher Address: 7600 Terrace Ave, Ste 203, Middleton, WI 53562-3174

Subject Categories:

Psychology: Impact Factor 2.506, / (2000)

? Sikkema, K.J. and Kelly, J.A. (1996), Behavioral medicine interventions can improve the quality-of-life and health of persons with HIV disease. *Annals of Behavioral Medicine*, **18** (1), 40-48.

Abstract: Interventions to enhance the quality-of-life and health of persons with human immunodeficiency virus (HIV) disease are becoming increasingly important as the number of people with HIV increases and as medical treatment regimens extend their life expectancy. Behavioral medicine approaches carry considerable promise for the treatment of disorders associated with HIV disease, including HIV-related nutritional disorders, pain management, sleep disorders, and treatment adherence. This article summarizes the literature on the prevalence of these disorders in HIV disease, reviews established behavioral medicine interventions for the disorders, and discusses how behavioral medicine interventions might be applied to the HIV manifestation of the disorders. Efforts to apply behavioral medicine approaches to improve life quality, alleviate sequelae of illness, and improve health outcomes in persons with HIV disease are urgently needed.

Keywords: Acquired-Immunodeficiency-Syndrome, Sleep Disturbances, Future-Directions, Clinical-Trials, Cancer-Patients, Chronic Pain, Infection, AIDS, Management, Adherence

? Jenkins, L.S. and Gortner, S.R. (1998), Correlates of self-efficacy expectation and prediction of walking behavior in cardiac surgery elders. *Annals of Behavioral Medicine*, **20** (2), 99-103.

Abstract: As the number of elderly patients undergoing cardiac surgery (coronary artery bypass and valve replacement) continues to increase, evidence is growing that they can do so with improved health status, functional status, longevity and life quality In this article, we used self-efficacy theory to explore one of the most common recovery behaviors-walking various distances. In pre operative data collected in-hospital through data collection at one, two, three, six, and twelve months postoperatively: we explored: (a) the trajectories of self-efficacy expectation (SEE) and self-reported (SR) behavior performance over the first postoperative year; (b) the relationships between SEE and SR behavior; (c) predictors of SEE; and (d) using hierarchical multiple regression, identified predictors of SR behavior at each point of time. The sample (N = 199) was primarily male (76%) with a mean age of 75.8 years. SEE and SR behavior increased owl time though with different trajectories; at all points in time, females had lower scores. Correlations between SEE and SR behavior were statistically significant (r values ranging from 0.67 to 0.89; p <.01)for both males and females. Predictors of SEE and SR identified were a mix of physiologic and psychologic constructs. The amount of explained variance in SR behavior scores ranged from a low of 23% at one month to a high of 64.7% at sh months. The gender differences sustained one year after cardiac surgery am striking; elder females may need targeted interventions to enhance recovery.

Keywords: Artery Bypass-Surgery, Functional-Capacity

? Kaplan, R.M. (1999), Shared medical decision-making: A new paradigm for behavioral medicine: 1997 presidential address. *Annals of Behavioral Medicine*, **21** (1), 3-11.

Abstract: Different conceptual models lead to different health care choices, The traditional biomedical model emphasizes identification of pathology (diagnosis) and remediation of these biological deficits (treatment). An alternative approach, known as the outcomes model, focuses attention on the outcomes of health care. Specifically, health care is regarded as effective only if it extends life or if it improves quality of life. Indices that combine life expectancy and life quality can be used to monitor the benefits of health care. According to the traditional model, medical cave is effective if it improves a clinical indicator (i.e. reduces blood pressure, decreases tumor size, etc.). According to the outcomes model, treatments are not advocated unless they improve general outcomes. There are circumstances in which clinical indicators improve but general outcomes remain the same or get worse. Data an the detection and treatment of prostate cancer are used to illustrate how these models might lead to different treatment decisions. According to the traditional model, aggressive screening and treatment of prostate cancer should be advocated because more cases ape detected early and more tumors are removed. According to the outcomes model, net quality-adjusted life may be reduced rather than enhanced with screening. Shared medical decision-making is an outgrowth of the outcomes model. Using these methods, patients and providers integrate the best scientific evidence on treatment efficacy with patient preferences for outcomes. Often shared decision-making leads to reductions to the use of medical procedures.

Keywords: Prostate-Specific Antigen, Breast-Cancer, Health-Care, Myocardial-Infarction, Coronary Angiography, Cost-Effectiveness, United-States, New-Haven, Outcomes, Disease

? Kroeze, W., Werkman, A. and Brug, J. (2006), A systematic review of randomized trials on the effectiveness of computer-tailored education on physical activity and dietary behaviors. *Annals of Behavioral Medicine*, **31** (3), 205-223.

Abstract: Background: Although computer-tailored promotion of dietary change and physical activity has been identified as a promising intervention strategy, there is a need for a more systematic evaluation of the evidence. Purpose: This study systematically reviews the scientific literature on computer-tailored physical activity and nutrition education. Methods: Intervention studies published from 1965 up to September 2004 were identified through a structured search in PUBMED, PsycInfo, and Web of Science and an examination of reference lists of relevant publications. Studies were included that applied a pretest-post-test randomized-controlled trial design, were aimed at primary prevention among adults, used computer-tailored interventions to change physical activity and dietary behaviors, and were published in English. The search resulted in 30 publications- I on physical activity behaviors and 26 on nutrition behaviors, some studies investigated multiple behaviors. Results: Three of I I of the physical activity studies and 20 of 26 of the nutrition studies found significant effects of the tailored interventions. The evidence was most consistent for tailored interventions on fat reduction. Conclusions: Overall, there seems to be potential for the application of computer tailoring for promoting healthy diets, but more research is needed to test computer-tailored interventions against other state-of-the-art intervention techniques and to identify the mechanisms underlying successful computer tailoring.

Keywords: Adults, Base-Line Survey, Education, Effectiveness, Evaluation, Information-System, Intervention, Intervention Studies, Interventions, Literature, Methods, Nutrition, Nutrition Education, Physical Activity, Prevention, Primary, Primary Prevention, Primary-Care, Promotion, Promotion Interventions Work, Publications, PUBMED, Randomized Controlled Trial, Receiving Food Assistance, Reduce Fat Intake, Research, Review, Science, State of The Art, Strategy, Systematic, Systematic Review, Transtheoretical Model, United-States, Vegetable Intake, Web of Science

? Goldbacher, E.M. and Matthews, K.A. (2007), Are psychological characteristics related to risk of the metabolic syndrome? A review of the literature. *Annals of Behavioral Medicine*, **34** (3), 240-252.

Abstract: Background: We evaluate the evidence that depression, anger, hostility, and anxiety are related to risk for the metabolic syndrome, focusing as well on its components of central adiposity and insulin resistance. In addition, we identify possible moderators of these associations and summarize plausible underlying biobehavioral pathways. Methods: Medline, PsycINFO, PUBMED, and Web of Science searches were conducted using the keywords metabolic syndrome, syndrome x, central adiposity/obesity, visceral adiposity/obesity, body fat distribution, waist circumference, waist hip ratio, insulin resistance/sensitivity, glucose tolerance, psychological, depression, hostility, anger, cynicism, and anxiety. Results: The current literature provides cross-sectional evidence for an association between psychological characteristics and the metabolic syndrome. Prospective data, though limited, suggest that depression, hostility, and anger predict increased risk for the metabolic syndrome. Data on modifiers are too limited to permit definitive conclusions. Negative health behaviors and hypothalamic and sympathetic dysregulation are identified as plausible underlying pathways. Conclusions: More prospective studies, conducted with diverse samples, are needed to delineate the direction of this relationship and the proposed biobehavioral mechanisms; experimental investigations are needed to test for causality. Nevertheless, findings suggest that psychological characteristics, especially depression, hostility, and anger, may increase risk for the metabolic syndrome, providing a novel direction for prevention and treatment interventions.

Keywords: 1966 Birth Cohort, Adiposity, Anxiety, Body-Fat Distribution, Causality, Coronary-Heart-Disease, Depression, Healthy Postmenopausal Women, Insulin, Insulin-Induced Hypoglycemia, Interventions, Life-Style Intervention, Literature, Methods, Middle-Aged Women, Nutrition Examination Survey, Pituitary-Adrenal Axis, Prevention, Prospective Studies, PUBMED, Ratio, Resistance, Review, Risk, Science, Treatment, Visceral Adipose-Tissue, Web of Science

# Title: Annals of Biomedical Engineering

Full Journal Title: Annals of Biomedical Engineering

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Foo, J.Y.A. (2009), The retrospective analysis of bibliographical trends for nine biomedical engineering journals from 1999 to 2007. *Annals of Biomedical Engineering*, **37** (7), 1474-1481.

Full Text: [2009\Ann Bio Eng37, 1474.pdf](2009/Ann%20Bio%20Eng37,%201474.pdf)

Abstract: For academic research outcomes, there is an increasing emphasis on the bibliometric scorings like the journal impact factor (JIF) when assessment of the quality of research is required. Currently, no known study has been conducted to explore the bibliographical trends of the biomedical engineering journals indexed by the annual Journal Citation Reports(A (R)) of the Thomson Scientific. In this study, the trends of nine reputable journals were selected and analyzed over a 9-year period (year 1999 to year 2007). The results show that the JIF rose exponentially for some journals (up to 597.0%) while for others, it shrank (down to -19.5%). A similar trend is observed for the citations trend over the same period and there was a significant increase in the number of citable articles published (a parts per thousand yen23.6%) in all the selected journals using year 1999 as the base year. However, journals which published significant more non-research articles (a parts per thousand yen10%) saw favorable subsequent effects on their citations. It is postulated that the changes in bibliographical trends can be classified as editorial and non-editorial influences. The retrospective impacts of these influences on the nine selected journals over the 9-year period were also discussed in this study.

Keywords: Assessment, Bibliographical Database, Bibliometric, Citation, Citation Impact, Citations, Downloads, Impact, Impact Factor, Impact Factor, Indexing, Journals, Online, Quality, Research, Trends, Usage Statistics

# Title: Annals of Botany

Full Journal Title: [Annals of Botany](http://www.idealibrary.com/links/toc/anbo)

ISO Abbreviated Title: Ann. Bot.

JCR Abbreviated Title: Ann Bot-London

ISSN: 0305-7364

Issues/Year: 12

Journal Country/Territory: England

Language: English

Publisher: Academic Press Ltd

Publisher Address: 24-28 Oval Rd, London NW1 7DX, England

Subject Categories:

Plant Sciences: Impact Factor 1.274, 42/137 (2000)

Clymo, R.S. (1963), Ion exchange in *Sphagnum* and its relation to bog ecology. *Annals of Botany*, **27**, 309-324.

Periasamy, K. and Amalathas, J. (1991), Absence of callose and tetrad in the microsporogenesis of *Pandanus odoratissimus* with well-formed pollen exine. *Annals of Botany*, **67** (1), 29-33.

Keywords: *Pandanus odoratissimus*, Microsporogenesis, Centrifugal Cleavage, Absence of Callose, Monad Formation

# Title: Annals of Clinical Biochemistry

Full Journal Title: [Annals of Clinical Biochemistry](http://acb.rsmjournals.com/archive/)

ISO Abbreviated Title: Ann. Clin. Biochem.

JCR Abbreviated Title: Ann Clin Biochem

ISSN: 0004-5632

Issues/Year: 6

Journal Country/Territory: England

Language: English

Publisher: Royal Soc Medicine Press Ltd

Publisher Address: 1 Wimpole Street, London W1m 8AE, England

Subject Categories:

Biochemistry & Molecular Biology: Impact Factor 1.113, / (2000); Impact Factor 1.130, / (2001)

Medical Laboratory Technology: Impact Factor 1.113, / (2000); Impact Factor 1.130, / (2001)

? Ryan, M.F. (1991), The role of magnesium in clinical biochemistry: An overview. *Annals of Clinical Biochemistry*, **28**, 19-26.

Full Text: 1991\Ann Cli Bio28, 19.pdf

Abstract: Magnesium is the second most abundant intracellular cation. It is essential for a wide variety of metabolically important reactions, in particular those involving ATP. Hypomagnesaemia is surprisingly common in hospital populations but is sometimes either undetected or overlooked.

Serum magnesium concentrations provide a guide to magnesium status but while hypomagnesaemia is a reliable indicator of magnesium deficiency, normomagnesaemia does not exclude magnesium depletion. A wide variety of conditions predispose to magnesium depletion. Clinical magnesium deficiency has potentially fatal consequences in vulnerable groups of patients and should be excluded in all such cases. Magnesium deficiency may result in hypokalaemia, hypocalcaemia or other disturbances of electrolyte homeostasis, refractory cardiac arrhythmias, or increased sensitivity to digoxin.

The capacity to measure serum and urine magnesium concentrations rapidly, regularly and reliably should be part of the repertoire of all clinical chemistry laboratories involved in the care of critically ill patients.

Keywords: Hypomagnesemia, Magnesium Depletion, Electrolyte Homeostasis, Cardiac Arrhythmias, Ischemic Heart-Disease, Acute Myocardial-Infarction, Hypomagnesemia, Deficiency, Absorption, Potassium, Calcium, Metabolism, Water, Rat

? Venner, A.A., Doyle-Baker, P.K., Lyon, M.E. and Fung, T.S. (2009), A meta-analysis of leptin reference ranges in the healthy paediatric prepubertal population. *Annals of Clinical Biochemistry*, **46**, 65-72.

Abstract: Objective: The initial discovery of leptin (11994) has given rise to a substantial number of published studies. This study aimed at identifying the published data on the reference ranges of total, free and bound leptin concentration in the healthy prepubertal population. Methods: A search was conducted on original English language studies published from 1994 to 2005 in the following databases: PubMed (n = 58), EMBASE (n = 4), Biological Abstracts In = 2) and Science Finder Scholar In = 66). A cited reference search was completed in Science Citation Index on studies with a leptin range. A meta-analysis was completed on included studies containing a dataset and a sample size for a leptin concentration range and/or mean +/- standard deviation for a healthy prepubertal population. Preanalytical and analytical variations were examined. Preanalytical variables included aspects such as fasting state and gender, while analytical variation comprised the type of leptin assay methodology. Results: Twelve studies met the inclusion criteria. One study examined free leptin; 11 studies examined total concentration. No studies reported leptin reference ranges established by Clinical and Laboratory Standards Institute (CLSI) criteria, although four studies reported specific study leptin ranges. The methodology of enzyme-linked immunosorbent assay demonstrated a wider leptin range than radio immunoassay (0.56-36.35 vs. 1.01-12.21 ng/mL). Males had a significantly lower mean leptin concentration than females (P = 0.0006); obese children had a higher concentration than non-obese (P = 0.0001). Conclusion: No studies have established CLSI-based leptin reference ranges in prepubertal healthy children and there is a wide variation in the published leptin concentrations. These differences suggest that caution should be used in the interpretation and comparison between studies.

Keywords: Body-Composition, Circulating Leptin, Citation, Clinical-Implications, Energy-Expenditure, Fat Distribution, Insulin-Sensitivity, Normal-Children, Plasma Leptin, Pubertal Changes, Sex-Differences

# Title: Annals of Clinical and Laboratory Science

Full Journal Title: Annals of Clinical and Laboratory Science

ISO Abbreviated Title: Ann. Clin. Lab. Sci.

JCR Abbreviated Title: Ann Clin Lab Sci

ISSN: 0091-7370

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Inst Clinical Science Inc

Publisher Address: 1833 Delancey Place, Philadelphia, PA 19103

Subject Categories:

Medical Laboratory Technology: Impact Factor

? Maynert, E.W. and Hammond, B.G. (1976), Modes of action of toxic agents. *Annals of Clinical and Laboratory Science*, **6** (4), 322-331.

Abstract: The principal modes of action of toxic agents are discussed in relation to the type of chemical bond formed between the poison and the target constituent of tissues. Alteration of enzyme activity, interference with the binding of poisonous chemicals to proteins, intercalation with nucleic acids, disturbances in electrolyte balance and the disorganization of cellular water and membrane lipids are illustrated as toxic processes involving ionic or van der Waals forces. The reactions of heavy metals with tissue nucleophiles and of exogenous nucleophiles with tissue metals are given brief attention in connection with coordinate-covalent binding. Covalent binding of poisons can arise from the incorporation of an antimetabolite into a larger molecule or reactions of electrophiles or free radicals with tissue constituents. These modes of action are illustrated by chemicals that produce necrosis, allergy or cancer.

? Sunderman, F.W. (1981), Chelation-therapy in nickel poisoning. *Annals of Clinical and Laboratory Science*, **11** (1), 1-8.

? Costa, R.A., Nuttall, K.L., Shaffer, J.B., Peterson, D.L. and Ash, K.O. (1997), Suspected lead poisoning in a public school. *Annals of Clinical and Laboratory Science*, **27** (6), 413-417.

Abstract: Reports of lead exposure can generate considerable public concern, particularly when children are involved. In December (1996), a public elementary school in rural Utah was found to have elevated concentrations of lead in its drinking water. The local public health department responded by instituting remediation of the water supply and by warning parents of the possible danger to their children. Subsequent blood lead testing in 116 of the approximately 300 children involved showed an average lead concentration in the range expected for the U.S. population at large. One of the 116 specimens was marginally elevated and was probably unrelated to the school drinking water. Reducing lead exposure is an important public health concern which sometimes generates a response out of proportion to the danger involved.

Keywords: California

# Title: Annals of Clinical Research

Full Journal Title: Annals of Clinical Research

ISO Abbreviated Title: Ann. Clin. Res.

JCR Abbreviated Title: Ann Clin Res

ISSN: 0003-4762

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Finnish Medical Soc Duodecim

Publisher Address:

Subject Categories:

: Impact Factor

? Syme, S.L. (1987), Social determinants of disease. *Annals of Clinical Research*, **19** (2), 44-52.

Abstract: The primary purpose for identifying psychosocial risk factors is to prevent disease and disease complications. For 30 years, we have been doing research in this field and have been successful in identifying such risk factors as Type A behavior, social isolation, stressful life events, and various psychological patterns. However, our success in using this information to help prevent disease has been much more limited. One reason for this limited success is that we have focused virtually all of our attention on the study of individuals and almost no attention on the social environment within which people live. There are two major limitations of such a one-to-one approach: it is difficult for people to change their behavior and their life situation and even if some people do change, others enter the “at risk” population because no action has been taken to change those forces in society that stimulated the problem in the first place. In discussing the social determinants of disease, it is important that we develop a new approach that permits us to study not only individuals but also the social environment. An example of this approach is provided by researchers who were successful in preventing infectious diseases. The work of these researchers focused not on clinical entities or on individuals but on the environment. This resulted in a disease classification system that included concepts such as air-borne, food-borne, water-borne, and vector-borne diseases. We have no such system for the study of non-infectious diseases. Considerable data already are available to help us to think about such a new classification system. (ABSTRACT TRUNCATED AT 250 WORDS).

# Title: Annals of Emergency Medicine

Full Journal Title: [Annals of Emergency Medicine](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6696&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=59497c3bdb7daf9b4b8f0f2cef7906a8)

ISO Abbreviated Title: Ann. Emerg. Med.

JCR Abbreviated Title:

ISSN: 0196-0644 Ann Emerg Med

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Mosby, Inc

Publisher Address: 11830 Westline Industrial DR, St Louis, MO 63146-3318

Subject Categories:

Emergency Medicine: Impact Factor 2.323, / (2001)

Krob, M.J., Cram, A.E., Vargish, T., Kassell, N.F., Davis, J.W. and Airola, S. (1984), Rural trauma care: A study of trauma care in a rural emergency medical services region. *Annals of Emergency Medicine*, **13** (10), 891-895.

Full Text: [1984\Ann Eme Med13, 891.pdf](1984/Ann%20Eme%20Med13,%20891.pdf)

? Goldberg, R., Newton, E., Cameron, J., Jacobson, R., Chan, L., Bukata, W.R. and Rakab, A. (1993), Reference accuracy in the Emergency-Medicine literature. *Annals of Emergency Medicine*, **22** (9), 1450-1454.

Full Text: [1993\Ann Eme Med22, 1450.pdf](1993/Ann%20Eme%20Med22,%201450.pdf)

Abstract: Study objective: To determine the incidence and nature of errors in the citation and quotation of references contained in the emergency medicine literature. Design: A retrospective analysis of a random sample of articles and references found in the three major emergency medicine journals, Setting: A university/county hospital. Methods: We examined single issues of three emergency medicine journals: Annals of Emergency Medicine, Journal of Emergency Medicine, and American Journal of Emergency Medicine. Interventions: None. Measurements: Four independent reviewers assessed 145 references from 46 referring authors for citational and quotational accuracy. Main results: Major and minor citation errors were found in 10.3% and 17.2% of reference listings, respectively. Qualitative quotational errors were found in 35.2% of references. Eighty-two percent of these errors were considered to be major. Quantitative quotational errors were found in 47% of references reviewed. Secondary rather than primary reference sources were used in 41.4% of references reviewed. Conclusion: This study demonstrates a substantial error rate in the citation and quotation of reference sources in the emergency medicine literature. In addition, verification of primary source material was not done by a large percentage of the authors reviewed. Recommendations for improving the accuracy of the emergency medicine literature are offered.

Keywords: Accuracy, Analysis, Authors, Citation, Citation Errors, Emergency, Emergency Medicine, Error, Error Rate, Errors, Hospital, Incidence, Journal, Journals, Literature, Medicine, Minor, Primary, Quotation, Random Sample, Reference, References, Retrospective Analysis, Source, Sources, Verification

? Fullerton, L., Olson, L., Crandall, C., Sklar, D. and Zumwalt, R. (1995), Occupational injury mortality in New-Mexico. *Annals of Emergency Medicine*, **26** (4), 447-454.

Full Text: [1995\Ann Eme Med26, 447.pdf](1995/Ann%20Eme%20Med26,%20447.pdf)

Abstract: Study objective: To examine specific risks for occupational injury deaths in New Mexico.

Design: Retrospective review of slate medical investigator reports from 1980 through 1991 with regard to industry, agent of death, gender, ethnicity, location, and alcohol and other drug involvement.

Participants: New Mexico residents who were fatally injured while on the job.

Results: We identified 613 deaths: 87.1% unintentional, 10.6% homicides, and 2.3% suicides. Industries with the most fatalities were construction(11.8%), oil/gas (10.6%), and farming (8.6%). The primary agents of death were motor vehicles (41.7%), firearms (10.1%), and falling objects (10.0%). Almost all (95.6%) oi the decedents were male. However, females were overrepresented among homicide deaths (P<.0001). Most unintentional injuries occurred in rural areas (69.1%), whereas most homicides (73.4%) and suicides (71.4%) occurred in urban areas. Drug or alcohol use was evident in 19.4% of cases.

Conclusion: New Mexico has a high rate of occupational injury death, which appears to be associated with rural location and use of motor vehicles and alcohol.

? Gurudevan, S.V. and Mower, W.R. (1996), Misrepresentation of research publications among emergency medicine residency applicants. *Annals of Emergency Medicine*, **27** (3), 327-330.

Full Text: [1996\Ann Eme Med26, 327.pdf](1996/Ann%20Eme%20Med26,%20327.pdf)

Abstract: Study objective: To assess the prevalence of misrepresented citations among emergency medicine residency applicants and to determine whether misrepresentation increases as the number of citations increases.

Methods: We examined 350 consecutive emergency medicine residency applications and then reviewed all cited publications to determine whether they were genuine or misrepresented. Applicants with citations were divided into three groups: those who listed one citation, those with two to four citations, and those with five or more citations. The numbers of individuals and misrepresentations were then tabulated and compared among the groups.

Results: Publications were cited on 113 applications (32.3%). Twenty-three applicants (20.4% of those who cited publications and 6.6% of ail applicants) misrepresented citations. Misrepresentations were found in 8 of 56 applications listing single citations (14.3%), 8 of 46 applications (17.4%) claiming two to four citations, and 7 of 11 (63.6%) applications claiming five or more citations (P = .00081, Pearson (2)(chi) test).

Conclusion: Emergency medicine residency applications may contain misrepresented citations. The number of misrepresentations in this study increased as the number of citations increased.

? Barnaby, D.P. and Gallagher, E.J. (1998), Alternative to the Science Citation Index impact factor as an assessment of emergency medicine’s scientific contributions. *Annals of Emergency Medicine*, **31** (1), 78-82.

Full Text: [1998\Ann Eme Med31, 78.pdf](1998/Ann%20Eme%20Med31,%2078.pdf)

Abstract: Study objective: The Science Citation Index “impact factor” is the only available quantitative estimate of a journal’s scientific contributions. However, the derivation of this factor contains an intrinsic bias that underestimates the impact of emergency medicine journals. We wished to test the hypothesis that use of an alternative criterion standard would provide an improved profile of the scientific contributions of emergency medicine journals relative to those of other specialties. Methods: We used an observational, longitudinal, comparative design in which all Index Medicus citations from Advanced Cardiac life Support (ACLS) publications were aggregated by journal and then stratified by specialty. Proportions and proportionate trends, relative to total citations, were reported by specialty, facilitating comparison of emergency medicine with other disciplines. Results: Among all eight ACLS publications (1974-1994) 4,062 citations met the inclusion criteria. Emergency medicine journals were referenced in 16% of eligible citations (99% confidence interval [CI], 14% to 17%), a figure exceeded only by internal medicine and cardiology journals. Emergency medicine was the only discipline to show a significant proportionate increase in contributions over the 20-year study period (P<.001 by chi(2) for linear trend analysis). Conclusion: Contrary to the implications of a low impact factor, an analysis of journal citations in ACLS publications over two decades suggests that emergency medicine has made significant contributions to a broad and important area of scientific inquiry.

Keywords: Advanced, Alternative, Analysis, Assessment, Bias, Cardiology, Citation, Citations, Comparison, Confidence, Criteria, Design, Emergency, Emergency Medicine, Impact, Impact Factor, Interval, Journal, Journal Citations, Journals, Life, Longitudinal, Medicine, Observational, Publications, Science Citation Index, Specialty, Standard, Trend, Trend Analysis, Trends

? Gallagher, E.J. and Barnaby, D.P. (1998), Evidence of methodologic bias in the derivation of the Science Citation Index impact factor. *Annals of Emergency Medicine*, **31** (1), 83-86.

Full Text: [1998\Ann Eme Med31, 83.pdf](1998/Ann%20Eme%20Med31,%2083.pdf)

Abstract: Study objective: The “impact factor” published in Science Citation Index (SCI) is widely used in the scientific community to measure the relative importance of a medical journal. In contrast to all other indicators of academic growth in emergency medicine, impact factors for emergency medicine journals have remained low and unchanged since the inception of the specialty. We wished to investigate this incongruity. Methods: We examined the methodology used to derive the SCI’s journal impact factor. Results: The impact factor for journals is defined mathematically as the number of times a journal is cited over a period of time (the numerator) divided by the number of articles published by that journal during the same period (the denominator). Citation counts are derived from examination of all references contained in a subset of journals known as “source” journals, No emergency medicine journals are included in this group. The only source of citations for emergency medicine journals is from journals outside of emergency medicine. This produces small numerators with relatively constant denominators, leading to low impact factors. Conclusion: The apparent failure of emergency medicine journals, as measured by the SCI impact factor, to keep pace with other indicators of academic development of the field is at least in part attributable to a methodologic bias inherent in the derivation of this factor.

Keywords: Academic, Bias, Citation, Citations, Community, Contrast, Development, Emergency, Emergency Medicine, Examination, Failure, Field, Group, Growth, Impact, Impact Factor, Impact Factors, Indicators, Journal, Journal Impact, Journal Impact Factor, Journals, Measure, Medical, Medicine, Methodology, References, SCI, Science Citation Index, Small, Source, Specialty

Cherry, D., Annest, J.L., Mercy, J.A., Kresnow, M.J. and Pollock, D.A. (1998), Trends in nonfatal and fatal firearm-related injury rates in the United States, 1985-1995. *Annals of Emergency Medicine*, **32** (1), 51-59.

Full Text: [1998\Ann Eme Med32, 51.pdf](1998/Ann%20Eme%20Med32,%2051.pdf)

Abstract: Study objective: To characterize trends in annual estimates of nonfatal firearm-related injuries treated in US hospital emergency departments and to compare trends in quarterly rates of such injuries with those of firearm-related fatalities in the US population.

Methods: Data on nonfatal firearm-related injuries were obtained from the National Electronic Injury Surveillance System (NEISS) by review of medical records for June 1, 1992, through May 31, 1995. Data on firearm-related fatalities were obtained from the National Vital Statistics System for January 1, 1985, through December 31, 1995. NEISS comprises 91 hospitals that represent a stratified probability sample of all hospitals in the United States and its territories that have at least six beds and provide 24-hour emergency service. The main outcome measures were numbers, percentages, and quarterly population rates for nonfatal and fatal firearm-related injuries.

Results: An estimated 288, 538 nonfatal firearm-related injuries (95% confidence interval [CI], 169, 776 to 407, 300) were treated in EDs during the 3-year study period. The annual number of nonfatal firearm-related injuries increased from 99, 025 for June 1992 through May 1993 (95% CI, 58, 266 to 139, 784) to 101, 669 for June 1993 through May 1994 (95% CI, 59, 822 to 143, 516), then decreased to 87, 844 for June 1994 through May 1995 (95% CI, 51, 687 to 124, 001). Before the third quarter of 1993, quarterly nonfatal and fatal firearm-related injury rates in the total US population and quarterly nonfatal firearm assaultive injury and firearm homicide rates for males aged 15 to 24 years were observed to be on the rise. Since then, these rates have significantly declined.

Conclusion: Analysis of national trends indicates that nonfatal and fatal firearm-related injuries are declining in the United States, although the rate of firearm-related deaths remains high, especially among males aged 15 to 24 years, in relation to other leading causes of injury death. An assessment of factors responsible for the decline in firearm-related injuries is needed to design further prevention efforts.

Keywords: Trauma System, Gun Ownership, Homicide, Violence, Surveillance, Institution, Emergency, Handguns, Suicide, Home

? Callaham, M., Weber, E. and Wears, R. (2001), Citation characteristics of research published in emergency medicine versus other scientific journals. *Annals of Emergency Medicine*, **38** (5), 513-517.

Full Text: [2001\Ann Eme Med38, 513.pdf](2001/Ann%20Eme%20Med38,%20513.pdf)

Abstract: Study Objective: We sought to examine how a cohort of published emergency medicine research is cited in scientific journals. Methods: Data were collected on all research submitted to the 1991 Society for Academic Emergency Medicine meeting and subsequently published. Outcome measures included all citations of these studies found in journals listed in the Science Citation Index, as well as the impact factors (citations per manuscript per year) of citing journals. Results: Two hundred four of the 493 submitted studies were published and met study entry criteria; the average article was cited 2.04 times a year during the study period. Twelve percent were never cited, and 39% were cited only once or twice. Thirty percent were published in non–emergency medicine journals, and these were cited at least twice as often (and by almost 3 times as many journals) as apparently similar studies published in emergency medicine journals. The percentage of studies never cited by anyone was about threefold higher when published in emergency medicine journals. Forty-two percent of the citations of research published in emergency medicine journals came from within the specialty. Emergency medicine journals provided only 16% of the citations of emergency medicine research published in non–emergency medicine journals because these studies were cited 3 times as often by authors in other disciplines. Rejection of research for presentation at the meeting did not predict the number or quality of citations or citing journals. Conclusion: Research submitted to the Society for Academic Emergency Medicine meeting and subsequently published is cited about as often as the average scientific journal article but receives more impact, is cited more widely, and is more likely to be cited by a broader range of authors when published by non–emergency medicine journals. The ability of emergency medicine journals to compete with larger non–emergency medicine journals for their larger audiences may help shape perceptions of the specialty. [Callaham M, Weber E, Wears R. Citation characteristics of research published in emergency medicine versus other scientific journals. Ann Emerg Med. November 2001;38:513-517.]

? Girasek, D.C., Gielen, A.C. and Smith, G.S. (2002), Alcohol’s contribution to fatal injuries: A report on public perceptions. *Annals of Emergency Medicine*, **39** (6), 622-630.

Full Text: [2002\Ann Eme Med39, 622.pdf](2002/Ann%20Eme%20Med39,%20622.pdf)

Abstract: Study objective: We determine whether members of the public understand that alcohol contributes to each of the leading causes of unintentional-injury death in the United States and not just to motor vehicle-related fatalities Public opinions. of selected alcohol control policies were also assessed.

Methods: We used a national telephone survey of 943 adults, who were selected by random-digit dialing techniques. Respondents’ mean estimates of alcohol’s involvement in fatal injuries were compared with published data from a meta-analysis of medical examiner data.

Results: The study population accurately estimated the proportion of fatal fall, drowning, and poisoning victims who were legally drunk when they died. Respondents overestimated the proportion of drivers killed in motor vehicle crashes who were intoxicated and underestimated the proportion of fire/burn victims. Fifty-seven percent of participants endorsed the myth that alcohol intoxication is protective against injury in the event of a motor vehicle crash. Participants were divided over whether increasing the legal drinking age to 21 had resulted in fewer injury deaths, Seventy-eight percent of participants did not believe that raising alcohol taxes would reduce fatal injuries. A majority (58%) of respondents supported taking blood alcohol levels on all “seriously injured” patients brought to the hospital.

Conclusion: This report suggests that public awareness of alcohol’s contribution to the breadth of the injury problem in the United States is high. Conversely, public understanding of whether prevention strategies have proven to be effective is poor. Emergency medicine practitioners can serve as credible sources of more accurate information for patients and the community at large.

Keywords: United-States, Policy

Ballard, D.W., Derlet, R.W., Rich, B.A. and Lowe, R.A. (2004), EMF-7 EMTALA: Two decades later. *Annals of Emergency Medicine*, **44** (4), S117-S117.

Full Text: [2004\Ann Eme Med44, S117.pdf](2004/Ann%20Eme%20Med44,%20S117.pdf)

? Williams, J., Nocera, M. and Casteel, C. (2008), The effectiveness of disaster training for health care workers: A systematic review. *Annals of Emergency Medicine*, **52** (3), 211-222.

Abstract: Study objective: Evidence-based medical literature is lacking about the best methods to train health care providers in disaster response. We systematically review the recent literature to report whether training interventions in disaster preparedness improve knowledge and skills in disaster response. Methods: We searched MEDLINE through PUBMED, ISI Web of Science, BIOSIS, Cumulative Index to Nursing and Allied Health (CINAHL), the Cochrane Library, ClinicalTrials.gov, the Public Affairs Information Service, and Education Full Text. Selected journals, articles, and other comprehensive reports were also reviewed for relevant citations. Subjects of eligible articles were hospital-based and out-of-hospital health care providers. Articles meeting inclusion criteria were published in English between January 2000 and December 2005, described a training exercise undertaken to further knowledge or skills in disaster response, measured a quantitative and objective outcome, and used a control group. Included studies were independently reviewed by 2 researchers, and study quality was assessed with criteria adapted from the US Preventive Services Task Force and the Centre for Reviews and Dissemination. Results: We identified 258 studies. Nine studies are included in this review. Computer- and lecture-based training interventions may be effective in increasing disaster-related knowledge for out-of-hospital providers, though questions about study design and quality may cast doubt on the results. Evidence about effectiveness of training for inhospital providers is inconclusive. Comparison across studies is difficult because of diversity in study subjects, designs, and interventions. Results are likely biased by contamination from outside events. Conclusion: The available evidence is insufficient to determine whether training interventions for health care providers are effective in improving knowledge and skills in disaster response.

Keywords: Articles, Bioterrorism, Citations, City, Clinician, Cochrane, Control, Education, Effectiveness, Exercise, Health, Health Care, Health Care Workers, Interventions, ISI, Journals, Knowledge, Literature, Medical, Medline, Methods, Nursing, Outcome, Preparedness, Professionals, PUBMED, Quantitative, Researchers, Review, Science, Statement, Systematic, Systematic Review, Tabletop Exercise, Task-Force, Terrorism, Raining, US, Web of Science

? Althaus, F., Paroz, S., Hugli, O., Ghali, W.A., Daeppen, J.B., Peytremann-Bridevaux, I. and Bodenmann, P. (2011), Effectiveness of interventions targeting frequent users of emergency departments: A systematic review. *Annals of Emergency Medicine*, **58** (1), 41-52.

Abstract: Study objective: Frequent users of emergency departments (EDs) are a relatively small group of vulnerable patients accounting for a disproportionally high number of ED visits. Our objective is to perform a systematic review of the type and effectiveness of interventions to reduce the number of ED visits by frequent users. Methods: We searched MEDLINE, EMBASE, CINAHL, PsychINFO, the Cochrane Library, and ISI Web of Science for randomized controlled trials, nonrandomized controlled trials, interrupted time series, and controlled and noncontrolled before-and-after studies describing interventions targeting adult frequent users of EDs. Primary outcome of interest was the reduction in ED use. We also explored costs analyses and various clinical (alcohol and drug use, psychiatric symptoms, mortality) and social (homelessness, insurance status, social security support) outcomes. Results: We included 11 studies (3 randomized controlled trials, 2 controlled and 6 noncontrolled before-and-after studies). Heterogeneity in both study designs and definitions of frequent users precluded meta-analyses of the results. The most studied intervention was case management (n=7). Only 1 of 3 randomized controlled trials showed a significant reduction in ED use compared with usual care. Six of the 8 before-and-after studies reported a significant reduction in ED use, and 1 study showed a significant increase. ED cost reductions were demonstrated in 3 studies. Social outcomes such as reduction of homelessness were favorable in 3 of 3 studies, and clinical outcomes trended toward positive results in 2 of 3 studies. Conclusion: Interventions targeting frequent users may reduce ED use. Case management, the most frequently described intervention, reduced ED costs and seemed to improve social and clinical outcomes. It appears to be beneficial to patients and justifiable for hospitals to implement case management for frequent users in the framework of a clear and consensual definition of frequent users and standardized outcome measures. [Ann Emerg Med. 2011;58:41-52.].

Keywords: Adult, Alcohol, Care, Clinical Case-Management, Cochrane, Costs, Definitions, Disease Management, Drug, Drug Use, Ed Users, Effectiveness, EMBASE, Follow-up, Heavy Users, Hospital Emergency, Hospitals, Interest, Intervention, Interventions, ISI, Management, Medline, Methods, Mortality, Outcome, Outcomes, Primary, Program, Randomized Controlled Trials, Randomized-Trial, Review, Science, Services, Social, Symptoms, Systematic, Systematic Review, Web of Science

? Haukoos, J.S., White, D.A.E., Lyons, M.S., Hopkins, E., Calderon, Y., Kalish, B. and Rothman, R.E. (2011), Operational methods of HIV testing in emergency departments: A systematic review. *Annals of Emergency Medicine*, **58** (1), S96-S103.

Abstract: Objectives: Casual review of existing literature reveals a multitude of individualized approaches to emergency department (ED) HIV testing. Cataloging the operational options of each approach could assist translation by disseminating existing knowledge, endorsing variability as a means to address testing barriers, and laying a foundation for future work in the area of operational models and outcomes investigation. The objective of this study is to provide a detailed account of the various models and operational constructs that have been described for performing HIV testing in EDs. Methods: Systematic review of PUBMED, EMBASE, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), and the Web of Science through February 6, 2009 was performed. Three investigators independently reviewed all potential abstracts and identified all studies that met the following criteria for inclusion: original research, performance of HIV testing in an ED in the United States, description of operational methods, and reporting of specific testing outcomes. Each study was independently assessed and data from each were abstracted with standardized instruments. Summary and pooled descriptive statistics were reported by using recently published nomenclature and definitions for ED HIV testing. Results: The primary search yielded 947 potential studies, of which 25 (3%) were included in the final analysis. of the 25 included studies, 13 (52%) reported results using nontargeted screening as the only patient selection method. Most programs reported using voluntary, opt-in consent and separate, signed consent forms. A variety of assays and communication methods were used, but relatively limited outcomes data were reported. Conclusion: Currently, limited evidence exists to inform HIV testing practices in EDs. There appears to be recent progression toward the use of rapid assays and nontargeted patient selection methods, with the rate at which reports are published in the peer-reviewed literature increasing. Additional research will be required, including controlled clinical trials, more structured program evaluation, and a focus on an expanded profile of outcome measures, to further improve our understanding of which HIV testing methods are most effective in the ED. [Ann Emerg Med. 2011;58:S96-S103.].

Keywords: Adolescents, Analysis, Barriers, Clinical Trials, Communication, Controlled Clinical Trials, Definitions, EMBASE, Emergency Department, Evaluation, Experience, Health, HIV, Human-Immunodeficiency-Virus, Implementation, Infection, Knowledge, Literature, Methods, Nursing, Outcome, Outcomes, Prevalence Area, Prevention, Primary, Profile, Program Evaluation, Research, Review, Science, Screening, Screening-Program, Sexually-Transmitted-Disease, Statistics, Systematic, Systematic Review, Translation, United-States, Variability, Web of Science

# Title: Annals of the Entomological Society of America

Full Journal Title: Annals of the Entomological Society of America

ISO Abbreviated Title: Ann. Entomol. Soc. Am.

JCR Abbreviated Title: Ann Entomol Soc Am

ISSN: 0013-8746

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Journal Country/Territory: United States

Language: English

Publisher: Entomol Soc Amer

Publisher Address: 9301 Annapolis Rd, Lanham, Md 20706

Subject Categories:

Entomology: Impact Factor 0.964, / (2000)

Labandeira, C.C. and Phillips, T.L. (1996), Insect fluid-feeding on upper Pennsylvanian tree ferns (Palaeodictyoptera, Marattiales) and the early history of the piercing-and-sucking functional feeding group. *Annals of the Entomological Society of America*, **89** (2), 157-183.

Abstract: We document the presence of the piercing-and-sucking functional feeding group and the dietary targeting of vascular tissue (phloem and xylem) in marattialean tree-fern rhachises from a Late Pennsylvanian (302 Ma) coal-swamp for est in the Illinois Basin. Our evidence originates from per mineralized peat that exhibits cellular-level preservation of tissues from whole Psaronius tree-fern rhachises; it includes 3 stylet probes, each of which traverses epidermal tissues and parenchyma, and terminates in a distinctive feeding cavity within phloem and xylem of a vascular strand. The styler probes are lined with an opaque, sheathlike material, and are principally intracellular, although large gum sac cells are avoided. One of their most diagnostic features is 1 or 2 ridges occurring on the inner surface of each stylet probe, paralleling most of the probe length. These ridges, documented by light and scanning electron microscopy, are interpreted as host tissue casts of interstyletal sulci. From these and other features of stylet-trace morphology, we conclude that the herbivore was an insect of the order Palaeodictyoptera rather than an hemipteroid insect. Well developed reaction tissue surrounding the styler trace developed while the plant host was alive, demonstrating herbivory. Precious studies have documented piercing-and-sucking in several examples of plant damage from the Early Devonian to Late Pennsylvanian (395-290 Ma). The oldest crebible examples are plant lesions indicating piercing-and-sucking arthropods from 2 Lower Devonian deposits. We hypothesize that in later Middle Pennsylvanian, equatorial, coal-swamp forests of Euramerica, the dominant arborescent plants possessed vascular tissues largely unavailable to insects, because they were either deeply embedded in thick cortical tissues or protected by outer indurated, peridermal tissues. Subsequent tree-fern forests of the Late Pennsylvanian provided accessible vascular and other tissues to surface-dwelling insects with stylate mouthparts-a condition which continued into the Permian and propelled the hemipteroid radiation.

Keywords: Palaeodictyoptera, Marattiales, Piercing-And-Sucking, Plant-Insect Interaction, Fossil Insects, Stylet Penetration, Hemiptera Insecta, Pterygote Insects, North-America, Plant-Damage, Thysanoptera, Homoptera, Arthropods, Morphology, Thrips

Spessa, A., Schwarz, P. and Adams, M. (2000), Sociality in *Amphylaeus morosus* (Hymenoptera: Colletidae: Hylaeinae). *Annals of the Entomological Society of America*, **93** (3), 684-692.

Abstract: To date, social nesting has been relatively unknown in the bee family Colletidae. Same-generation females of the bee Amphylaeus morosus Smith frequently share tubular nests where only 1 brood cell can be provisioned at a time. In montane eucalypt forests of southern Australia A. morosus nests are constructed within naturally excised fronds of the rough tree fern, Cyathea australis. In these habitats, the species is univoltine with adult eclosion occurring in late summer. Dispersal from overwintering nests and new nest initiation begins in spring, and all new nests contain only 1 adult female. However, a significant proportion of old, reused nests during the brood-rearing phase contain 2 or 3 adult females that are mated with mature ovaries (approximate to 23% of all inhabited nests). Per capita brood production was statistically higher in reused. versus new nests, probably because the former start their cell provisioning earlier. Per capita brood production was not statistically higher in two-versus one-female reused nests, although there were trends in this direction and earlier adult female mortality may have obscured end-of-season patterns. Brood parasitization by a gasteruptiid wasp (Casteruption sp.) was statistically higher in new nests than two-female reused nests, but only marginally higher in one-versus two-female reused nests. Average relatedness among adult females in multifemale nests was quite low (r = 0.26±0.06 SE). Hence, kin selection is unlikely to be a major factor selecting for cooperative nesting in this species. Cell provisioning patterns in A. morosus could lead to nestmates conflicting over foraging effort and reproduction. No evidence for reproductive division of labor or foraging specialization among nestmates was found, however, and their relative body sizes, ovary sizes, and wing wear were not significantly different from statistical expectation. Therefore, sociality in A. morosus probably results from the benefits of sharing a valuable resource (i.e., a preexisting nest) and avoiding dispersal costs, rather than cooperation per se. Nevertheless, the prospects for nestmate cheating are high. High-resolution genetic studies could determine if the apparent lack of reproductive skew, based on dissection data reflects brood maternity. Sociality in A. morosus provides an ideal opportunity to investigate reproductive skew theories.

Keywords: Colletidae, Cooperative Nesting, Amphylaeus, Social Evolution, Mixed-Model Analysis, Relatedness, Evolution, Societies, Skew

# Title: Annals of Eugenics

Full Journal Title: Annals of Eugenics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Williams, C.B. (1943), The numbers of publications written by biologists. *Annals of Eugenics*, **12**, 143-146.

# Title: Annals of Family Medicine

Full Journal Title: Annals of Family Medicine

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Matthys, J., De Meyere, M., van Driel, M.L. and De Sutter, A. (2007), Differences among international pharyngitis guidelines: Not just academic. *Annals of Family Medicine*, **5** (5), 436-443.

Abstract: PURPOSE Many countries have national guidelines for the treatment of pharyngitis. We wanted to compare the recommendations and the reported evidence in national guidelines for the management of acute sore throat in adults. METHODS Guidelines were retrieved via MEDLINE and EMBASE and through a Web-based search for guideline development organizations. The content of the recommendations and the underlying evidence were analyzed with qualitative and bibliometric methods. RESULTS We included 4 North American and 6 European guidelines. Recommendations differ with regard to the use of a rapid antigen test and throat culture and with the indication for antibiotics. The North American, French, and Finnish guidelines consider diagnosis of group A streptococcus essential, and prevention of acute rheumatic fever remains an important reason to prescribe antibiotics. In 4 of the 6 European guidelines, acute sore throat is considered a self-limiting disease and antibiotics are not recommended. The evidence used to underpin these guidelines was different in North America and Europe. North American guidelines cited more North American references than did European guidelines (87.2% vs 48.0%; ods ratio, 4.6-11.9; P <.001). CONCLUSION Although the evidence for the management of acute sore throat is easily available, national guidelines are different with regard to the choice of evidence and the interpretation for clinical practice. Also a transparent and standardized guideline development method is lacking. These findings are important in the context of appropriate antibiotic use, the problem of growing antimicrobial resistance, and costs for the community.

Keywords: Acute Rheumatic-Fever, Acute Sore Throat, Antibiotics, Attack Rate, Bibliometric, Bibliometric Methods, Clinical-Practice Guidelines, Countries, Development, Diagnosis, Europe, Evidence-Based Medicine, Family Practice, General Population, Glomerulonephritis, Management, Medline, Pharyngitis, Practice Guideline [Publication Type], Primary Health Care, Primary-Care, Sore Throat, Streptococcal Pharyngitis, Systematic Reviews, Treatment

? Richardson, C.R., Newton, T.L., Abraham, J.J., Sen, A., Jimbo, M. and Swartz, A.M. (2008), A meta-analysis of pedometer-based walking interventions and weight loss. *Annals of Family Medicine*, **6** (1), 69-77.

Abstract: PURPOSE: Cross-sectional studies show that individuals who walk more tend to be thinner than those who walk less. This does not mean, however, that the association between higher step counts and lower weight is causal or that encouraging sedentary individuals to increase step counts helps them lose weight. METHODS: In this meta-analysis, we searched 6 electronic databases and contacted pedometer experts to identify pedometer-based walking studies without a dietary intervention that reported weight change as an outcome. We included randomized controlled trials and prospective cohort studies published after January 1, 1995, in either English or Japanese, with 5 or more adult participants and at least 1 cohort enrolled in a pedometer-based walking intervention lasting at least 4 weeks. RESULTS: Nine studies met the study inclusion criteria. Cohort sample size ranged from 15 to 106, for a total of 307 participants, 73% of whom were women and 27% of whom were men. The duration of the intervention ranged from 4 weeks to 1 year, with a median duration of 16 weeks. The pooled estimate of mean weight change from baseline using a fixed-effects model and combining data from all 9 cohorts was -1.27 kg (95% confidence interval, -1.85 to -0.70 kg). Longer intervention duration was associated with greater weight change. On average, participants lost 0.05 kg per week during the interventions. CONCLUSION: Pedometer-based walking programs result in a modest amount of weight loss. Longer programs lead to more weight loss than shorter programs.

Keywords: Adult, Association, Confidence, Criteria, Lead, Men, Meta-Analysis, Model, Randomized Controlled Trials, Sample Size, Size, Women

# Title: Annals of Forest Science

Full Journal Title: Annals of Forest Science

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Dobbertin, M.K. and Nobis, M.P. (2010), Exploring research issues in selected forest journals 1979-2008. *Annals of Forest Science*, **67** (8), Article Number: 800.

Full Text: [2010\Ann For Sci67, 800.pdf](2010/Ann%20For%20Sci67,%20800.pdf)

Abstract: Forest science and policy have experienced significant changes under the pressure of global change. Assuming that scientific publications mirror contemporary issues, our objective was to verify whether titles of articles show a temporal trend, and whether it coincides with the new agenda set by sustainable forest management. We used ISI Web of Science to collect articles published 1979-2008 in 6 peer-reviewed forest(ry) journals (n = 20 677). We split titles into strings and processed them to increase the homogeneity of our sample. We applied principal components analysis (PCA) as an indirect gradient analysis. We also searched titles for words related to the social, political and economic components of forestry. The PCA ordination revealed a dominant and distinct time gradient in the use of title words in our corpus. A few words have disappeared, but those with a positive trend clearly dominate, reflecting an opening of forest science towards more process-oriented research, especially in ecology and environmental and climate change. However, socio-economic aspects are still underrepresented. In our study, titles of forest(ry) publications increasingly include topics from neighboring natural sciences, but still very few from socio-economic disciplines.

Keywords: Analysis, Bibliometrics, Climate Change, Ecology, Europe, Forest Research, Global Change, Interface, ISI, Journals, Peer-Reviewed Publications, Pressure, Principal Component Analysis, Publications, Research, Research Trends, Science, Trend, Web of Science

# Title: Annals of General Psychiatry

Full Journal Title: Annals of General Psychiatry

ISO Abbreviated Title:

JCR Abbreviated Title: Ann Gen Psychiatry

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Turner, O., Windfuhr, K. and Kapur, N. (2007), Suicide in deaf populations: A literature review. *Annals of General Psychiatry*, **6**, 26.

Full Text: [2007\Ann Gen Psy6, 26.pdf](2007/Ann%20Gen%20Psy6,%2026.pdf)

Abstract: ABSTRACT: BACKGROUND: Studies have found that deaf individuals have higher rates of psychiatric disorder than those who are hearing, while at the same time encountering difficulties in accessing mental health services. These factors might increase the risk of suicide. However, the burden of suicidal behaviour in deaf people is currently unknown.The aim of the present review was to provide a summary of literature on suicidal behaviour with specific reference to deaf individuals. The objectives of the review were to establish the incidence and prevalence of suicidal behaviour in deaf populations; describe risk factors for suicidal behaviour in deaf populations; describe approaches to intervention and suicide prevention that have been used in deaf populations. METHODS: A number of electronic databases (e.g. MEDLINE, PsycINFO, CINAHL, EMBASE, Dissertation Abstracts International, Web of Science, ComDisDome, ASSIA, Education Sage Full Text, Google Scholar, and the grey literature databases FADE and SIGLE) were explored using a combination of key words and medical subject headings as search terms. Reference lists of papers were also searched. The Science and Social Sciences Citation Index electronic databases were used to identify studies that had cited key papers. We also contacted experts and organisations with an interest in the field. RESULTS: Very few studies focussed specifically on suicide in deaf populations. Those studies that were included (n = 13) generally involved small and unrepresentative samples. There were limited data on the rate of suicidal behaviour in deaf people. One study reported evidence of hearing impairment in 0.2% of all suicide deaths. Another found that individuals with tinnitus seen in specialist clinics had an elevated rate of suicide compared to the general population. The rates of attempted suicide in deaf school and college students during the previous year ranged from 1.7% to 18%, with lifetime rates as high as 30%. Little evidence was found to suggest that risk factors for suicide in deaf people differed systematically from those in the general population. However, studies did report higher levels of depression and higher levels of perceived risk among deaf individuals than hearing control groups. No firm evidence was found regarding the effectiveness of suicide prevention strategies in deaf people, but suggested strategies include developing specific screening tools, training clinical staff, promoting deaf awareness, increasing the availability of specialist mental health services for deaf people. CONCLUSION: There is a significant gap in our understanding of suicide in deaf populations. Clinicians should be aware of the possible association between suicide and deafness. Specialist mental health services should be readily accessible to deaf individuals and specific preventative strategies may be of benefit. However, further research using a variety of study designs is needed to increase our understanding of this issue.

Keywords: Association, Availability, Background, Behaviour, Burden, Clinical, College, Control, Control Groups, Data, Databases, Deafness, Depression, Developing, Effectiveness, Evidence, Experts, Field, General, Health, Health Services, Hearing Impairment, Incidence, Intervention, Literature, Literature Review, Medical, Mental Health, Methods, Papers, Population, Populations, Prevalence, Prevention, Psycinfo, Rates, Research, Review, Risk, Risk Factors, Screening, Services, Small, Students, Suicide, Suicide Prevention, Training, Understanding, Web of Science

# Title: Annals of Internal Medicine

Full Journal Title: [Annals of Internal Medicine](http://www.annals.org/)

ISO Abbreviated Title: Ann. Intern. Med.

JCR Abbreviated Title: Ann Intern Med

ISSN: 0003-4819

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Journal Country/Territory: United States

Language: English

Publisher: Amer Coll Physicians

Publisher Address: Independence Mall West 6th and Race St, Philadelphia, PA 19106-1572

Subject Categories:

Medicine, General & Internal: Impact Factor 11.130, / (2001)

Notes: highly cited

? Burman, K.D. (1982), Hanging from the masthead - Reflections on authorship. *Annals of Internal Medicine*, **97** (2), 602-605.

Full Text: [1982\Ann Int Med97, 602.pdf](1982/Ann%20Int%20Med97,%20602.pdf)

Abstract: Authorship of a scientific article should imply expertise on its content and thorough knowledge of the investigation reported. Because the number of authors per article has dramatically increased, I question whether these criteria for authorship are applied. Another explanation for this increase is that authors add names to the byline without reference to any set of criteria, resulting in the designation of coauthorship when not warranted. The medical community needs to redefine the proper procedure and criteria for deciding on authorship and to strictly abide by these procedures. Specific recommendations center around the protocol as the initial instrument of communication. Who should be designated as author, and the order of names, should be negotiated before and during the study, and written communication with other involved laboratories should result in more appropriate authorship attribution.

? Huth, E.J. (1986), Guidelines on authorship of medical papers. *Annals of Internal Medicine*, **104** (2), 269-274.

Full Text: [1984\Ann Int Med104, 269.pdf](1984/Ann%20Int%20Med104,%20269.pdf)

Garfield, E. (1986), Which medical journals have the greatest impact. *Annals of Internal Medicine*, **105** (2), 313-320.

Full Text: [1986\Ann Int Med105, 313.pdf](1986/Ann%20Int%20Med105,%20313.pdf)

? Fye, W.B. (1990), Medical authorship: Traditions, trends, and tribulations. *Annals of Internal Medicine*, **113** (4), 317-325.

Full Text: [1990\Ann Int Med113, 317.pdf](1990/Ann%20Int%20Med113,%20317.pdf)

? Barrettconnor, E. (1991), Postmenopausal estrogen and prevention bias. *Annals of Internal Medicine*, **115** (6), 455-456.

Full Text: [A\Ann Int Med115, 455.pdf](A/Ann%20Int%20Med115,%20455.pdf)

Abstract: A mailed health survey questionnaire was returned by 1008 of 1057 (95%) previously studied older women from Rancho Bernardo, a socioeconomiclaly upper-middle-class California community where replacement estrogen use was known to be common. Women currently using estrogen had significantly healthier behaviors and more preventive services by physicians (recent cholesterol check, rectal examination, papanicolaou smear, and mammogram) than nonusers. These differences may explain some of the benefits and risks currently attributed to hormone replacement therapy.

Keywords: Estrogen Replacement Therapy, Preventive Health Services, Health Behavior, Lipoproteins, HDL Cholesterol, Bias (Epidemiology), Replacement Therapy, Breast-Cancer, Women, Risk

Hommes, D.W., Bura, A., Mazzolai, L., Buller, H.R. and Tencate, J.W. (1992), Subcutaneous heparin compared with continuous intravenous heparin administration in the initial treatment of deep-vein thrombosis: A meta-analysis. *Annals of Internal Medicine*, **116** (4), 279-284.

Full Text: [1992\Ann Int Med116, 279.pdf](1992/Ann%20Int%20Med116,%20279.pdf)

Abstract: Objective: To quantitatively assess the efficacy and safety of published randomized trials comparing subcutaneous heparin with continuous intravenous heparin for the initial treatment of deep vein thrombosis.

Data Identification: Studies published between January 1966 and April 1991 were identified through computer searches of the MEDLINE database and through reviews of the Science Citation Index, Current Contents, proceedings and abstract books, and references cited in the identified articles. Complete manuscripts were obtained from the authors if only abstracts were available.

Study Selection: Eight clinical trials were identified that compared subcutaneous with intravenous heparin administration in patients with venographically confirmed deep vein thrombosis.

Data Extraction: Each study was independently analyzed for the percentage distribution of thrombosis, the method of outcome measurement, and the heparin dose. The methodologic strength of each study was assessed using predefined standards for the proper evaluation of a therapeutic intervention with particular emphasis on the type of patient allocation and objective measurements.

Results of Data Analysis: The overall relative risk for efficacy (defined as prevention of extension and recurrence of venous thromboembolism) of subcutaneous compared with intravenous heparin treatment was 0.62 (95% Cl, 0.39 to 0.98), whereas for safety (defined as major hemorrhage) it was 0.79 (Cl, 0.42 to 1.48).

Conclusions: The results of our meta-analysis indicated that heparin administered subcutaneously twice daily in the initial treatment of deep vein thrombosis is more effective and at least as safe as continuous intravenous heparin administration. Administration of heparin subcutaneously may simplify patient treatment and could facilitate home treatment.

Keywords: Metaanalysis, Heparin, Thrombosis, Drug Administration Routes, Cost Control, Randomized Trial, Therapy, Management

Cunningham, Jr., E.T., Ravich, W.J., Jones, B. and Donner, M.W. (1992), Vagal reflexes referred from the upper aerodigestive tract: An infrequently recognized cause of common cardiorespiratory responses. *Annals of Internal Medicine*, **116** (7), 575-582.

Full Text: [1992\Ann Int Med116, 575.pdf](1992/Ann%20Int%20Med116,%20575.pdf)

Abstract: Objective: To review the physiologic basis for normal and abnormal vagal reflexes arising from the pharynx, larynx, and esophagus, as well as the relevance of vagal reflexes to the pathogenesis of such clinically common cardiorespiratory responses as bradycardia, tachycardia, dysrhythmia, coronary angiospasm, bronchospasm, laryngospasm, prolonged apnea, and singultus (hiccups).

Data Sources: Pertinent articles and reviews were identified through a MEDLINE search (April 1966 to October 1991). Older studies and others not identified in the MEDLINE search were found through a manual search of the bibliographies of the retrieved articles.

Study Selection: Experimental studies in both humans and animals, as well as case series and single case reports, were selected for evaluation and citation. In instances where a similar phenomenon was described in multiple independent reports, only studies that provided a novel finding or interpretation were cited. More authoritative book chapters and peer-reviewed summaries were also cited in support of commonly summaries principles.

Data Extraction and Synthesis: Most of the clinical data are derived from case reports and small case series and are therefore anecdotal; equal weight was given to all such studies. Reports of conflicting observations or interpretations were clearly identified and were cited without exception.

Conclusions: Stimulation of the upper aerodigestive tract can lead to clinically significant cardiorespiratory responses. Although the prevalence of and risk factors for such responses have not been established, we suggest that a pharyngeal, a laryngeal, or an esophageal source for abnormal cardiorespiratory responses be sought whenever a detailed clinical evaluation fails to reveal a cause, particularly when there are concurrent symptoms or signs of upper aerodigestive tract disease, such as dysphagia or gastroesophageal reflux.

Keywords: Vagus Nerve, Cardiovascular Diseases, Respiratory Tract Diseases, Syncope, Gastroesophageal Reflux, Upper Airway-Obstruction, Sudden Infant Death, Upper Alimentary-Tract, Gastroesophageal Reflux, Pulmonary-Edema, Glossopharyngeal Neuralgia, Tracheal Intubation, Swallow Syncope, Viscerotopic Representation, Endotracheal Intubation

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Full Text: Ann Int Med116, 705.pdf

Abstract: Objective: To determine the effect of treating Helicobacter pylori infection on the recurrence of gastric and duodenal ulcer disease. Design: Follow-up of up to 2 years in patients with healed ulcers who had participated in randomized, controlled trials. Setting: A Veterans Affairs hospital. Participants: A total of 109 patients infected with H. Pylori who had a recently healed duodenal (83 patients) or gastric ulcer (26 patients) as confirmed by endoscopy. Intervention: Patients received ranitidine, 300 mg, or ranitidine plus triple therapy. Triple therapy consisted of tetracycline, 2 g; metronidazole, 750 mg; and bismuth subsalicylate, 5 or 8 tablets (151 mg bismuth per tablet) and was administered for the first 2 weeks of treatment; ranitidine therapy was continued until the ulcer had healed or 16 weeks had elapsed. After ulcer healing, no maintenance antiulcer therapy was given. Measurements: Endoscopy to assess ulcer recurrence was done at 3-month intervals or when a patient developed symptoms, for a maximum of 2 years. Results: The probability of recurrence for patients who received triple therapy plus ranitidine was significantly lower than that for patients who received ranitidine alone: for patients with duodenal ulcer, 12% (95% Cl, 1% to 24%) com pared with 95% (Cl, 84% to 1 00%); for patients with gastric ulcer, 13% (Cl, 4% to 31%) compared with 74% (44% to 100%). Fifty percent of patients who received ranitidine alone for healing of duodenal or gastric ulcer had a relapse within 12 weeks of healing. Ulcer recurrence in the triple therapy group was related to the failure to eradicate H. pylori and to the use of nonsteroidal anti-inflammatory drugs. Conclusions: Eradication of H. pylori infection markedly changes the natural history of peptic ulcer in patients with duodenal or gastric ulcer. Most peptic ulcers associated with H. pylori infection are curable.

Keywords: Campylobacter-Pylori, Cure, Duodenal Ulcer, Eradication, Helicobacter Pylori, Helicobacter-Pylori, Maintenance Therapy, Ranitidine, Relapse, Stomach Ulcer, Treatment

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Full Text: [A\Ann Int Med117, 1016.pdf](A/Ann%20Int%20Med117,%201016.pdf)

Abstract: Purpose: To critically review the risks and benefits of hormone therapy for asymptomatic postmenopausal women who are considering long-term hormone therapy to prevent disease or to prolong life.

Data Sources: Review of the English-language literature since 1970 on the effect of estrogen therapy and estrogen plus progestin therapy on endometrial cancer, breast cancer, coronary heart disease, osteoporosis, and stroke. We used standard meta-analytic statistical methods to pool estimates from studies to determine summary relative risks for these diseases in hormone users and modified lifetable methods to estimate changes in lifetime probability and life expectancy due to use of hormone regimens.

Results: There is evidence that estrogen therapy decreases risk for coronary heart disease and for hip fracture, but long-term estrogen therapy increases risk for endometrial cancer and may be associated with a small increase in risk for breast cancer. The increase in endometrial cancer risk can probably be avoided by adding a progestin to the estrogen regimen for women who have a uterus, but the effects of combination hormones on risk for other diseases has not been adequately studied.

We present estimates for changes in lifetime probabilities of disease and life expectancy due to hormone therapy in women who have had a hysterectomy; with coronary heart disease; and at increased risk for coronary heart disease, hip fracture, and breast cancer.

Conclusions: Hormone therapy should probably be recommended for women who have had a hysterectomy and for those with coronary heart disease or at high risk for coronary heart disease. For other women, the best course of action is unclear.

Keywords: Menopause, Estrogen Replacement Therapy, Osteoporosis, Postmenopausal, Coronary Disease, Progestational Hormones, Estrogen Replacement Therapy, Post-Menopausal Women, Coronary Heart-Disease, Long-Term Estrogen, Breast-Cancer Risk, Non-Contraceptive Estrogens, Density-Lipoprotein Subfractions, Acute Myocardial-Infarction, Endometrial Cancer, Exogenous Estrogens

Eisenberg, D.M. (1997), Advising patients who seek alternative medical therapies. *Annals of Internal Medicine*, **127** (1), 61-69.

Full Text: [A\Ann Int Med127, 61.pdf](A/Ann%20Int%20Med127,%2061.pdf)

Abstract: Alternative medical therapies, such as chiropractic, acupuncture, homeopathy, and herbal remedies, are in great public demand. Some managed care organizations now offer these therapies as an “expanded benefit.” Because the safety and efficacy of these practices remain largely unknown, advising patients who use or seek alternative treatments presents a professional challenge. A step-by-step strategy is proposed whereby conventionally trained medical providers and their patients can preactively discuss the use or avoidance of alternative therapies. This strategy involves a formal discussion of patients’ preferences and expectations, the maintenance of symptom diaries, and follow-up visits to monitor for potentially harmful situations. In the absence of professional medical and legal guidelines, the proposed management plan emphasizes patient safety, the need for documentation in the patient record, and the importance of shared decision making.

Keywords: Eosinophilia-Myalgia-Syndrome, Herbal Medicines, Chiropractic Manipulation, Spinal Manipulation, Adverse Reactions, Clinical-Trials, United-States, Chinese Herbs, Chronic Pain, Hepatitis-B

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Full Text: [A\Ann Int Med135, 507.pdf](A/Ann%20Int%20Med135,%20507.pdf)

Abstract: A reflection on the scientific behavior of adherents of conventional medicine toward one form of alternative medicine-homeopathy-teaches us that physicians do reject seemingly solid evidence because it is not compatible with theory. Further reflection, however, shows that physicians do the same within conventional medical science: Sometimes they discard a theory because of new facts, but at other times they cling to a theory despite the facts. This essay highlights the seeming contradiction and discusses whether it still permits the building of rational medical science. We propose that rational science Is compatible with physicians’ behavior, provided that physicians acknowledge the subjective element in the evaluation of science, as exemplified in the crossword analogy by the philosopher Haack. This type of thinking fits very well with the Bayesian approach to decision making that has been advocated for decades in clinical medicine. It does not lead to complete and uncontrollable subjectivity because discernment between rivaling explanations is still possible through argument and counterargument.

Keywords: Controlled Trials, Vasovagal Syncope, Homeopathy Trials, Clinical-Trials, Metaanalysis, Pacemaker, Industry

Hebert, R.S., Smith, C.G. and Wright, S.M. (2003), Minimal prevalence of authorship misrepresentation among internal medicine residency applicants: Do previous estimates of “misrepresentation” represent insufficient case finding? *Annals of Internal Medicine*, **138** (5), 390-392.

Full Text: [2003\Ann Int Med138, 390.pdf](2003/Ann%20Int%20Med138,%20390.pdf)

Abstract: Background: High rates of authorship misrepresentation have been documented among medical trainees.

Objective: To assess misrepresentation among internal medicine residency applicants while comparing searches used by previous authors (searches 1 and 2) to a more comprehensive strategy (search 3).

Design: Review of 497 residency applications.

Setting: Two university-based internal medicine residency programs.

Measurements: Search 1 was limited to MEDLINE. Search 2 added Current Contents, Science Citation Index, and BIOSIS and included searching journals by hand. Search 3 added seven other databases and contacts to librarians, editors, and coauthors.

Results: 224 applicants reported 634 articles; 630 (99%) were verified. The number of applicants with misrepresented citations varied depending on the search used (56 applicants [25%] in search 1 vs. 34 applicants [15%] in search 2 vs. 4 applicants [1.8%] in search 3).

Conclusions: Using a comprehensive search, we found substantially less misrepresentation than had been reported. Previous studies probably overestimated the magnitude of the problem.

Keywords: Gastroenterology Fellowships, Academic Accomplishments, Publications

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Full Text: [A\Ann Int Med139, 715.pdf](A/Ann%20Int%20Med139,%20715.pdf)

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Full Text: [2004\Ann Int Med140, 121.pdf](2004/Ann%20Int%20Med140,%20121.pdf)

Abstract: Background: The Ottawa knee rule is a clinical decision aid that helps rule out fractures and avoid unnecessary radiography. Purpose: To summarize evidence about the accuracy of the Ottawa knee rule. Data Sources: Relevant English- and non-English-language articles were identified from PreMEDLINE and MEDLINE (19662003), EMBASE (1980-2003), CINAHL (1982-2003), BIOSIS (1990-2003), the Cochrane Library (2002, Issue 3), the Science Citation Index database, reference lists of included studies, and experts. Study Selection: Articles were included if they reported enough information to determine the sensitivity and specificity of the Ottawa knee rule for detecting fractures confirmed either radiologically or in combination with follow-up. Data Extraction: Two reviewers independently extracted data on study samples, the ways that the Ottawa knee rule was used, and methodologic characteristics of studies. Data Synthesis: of 11 identified studies, 6 involving 4249 adult patients were considered appropriate for pooled analysis. The pooled negative likelihood ratio was 0.05 (95% CI, 0.02 to 0.23), the pooled sensitivity was 98.5% (CI, 93.2% to 100%), and the pooled specificity was 48.6% (CI, 43.4% to 51.0%). Conclusion: A negative result on an Ottawa knee rule test accurately excluded knee fractures after acute knee injury. However, because the rule is calibrated toward 100% sensitivity and actual fracture prevalences are usually low, large-scale, multicentered studies are still needed to establish the cost-effectiveness of routinely implementing the rule.

Keywords: Analysis, Articles, Citation, Database, Decision Rule, Diagnostic-Tests, Embase, Extraction, Injuries, Medline, Radiography, Science, Science Citation Index, Sensitivity and Specificity, Synthesis, Systematic Review, Validation

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Full Text: [2004\Ann Int Med141, 805.pdf](2004/Ann%20Int%20Med141,%20805.pdf)

Keywords: Health, Health Disparities, Literature

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Full Text: [2005\Ann Int Med143, 129.pdf](2005/Ann%20Int%20Med143,%20129.pdf)

Abstract: Background: Clinical assessment of suspected deep venous thrombosis (DVT) should be based on systematically evaluated evidence. Purpose: To determine whether clinical findings, risk scores, and physicians, empirical judgments affect the likelihood of detecting DVT on definitive testing. Data Sources: MEDLINE, EMBASE, CINAHL, Web of Science, Cochrane Database of Systematic Reviews, Cochrane Controlled Trials Register, Database of Reviews of Effectiveness, ACP Journal Club, and citation lists (1966 to January 2005). Study Selection: Cohort studies published in English, French, Spanish, or Italian that compared clinical assessment with a reference standard. Data Extraction: The authors extracted standardized data, including setting, exclusions, population characteristics, reference standard, and results, and assessed quality against validated criteria. Data Synthesis: The authors combined data by using random-effects meta-analysis and, if appropriate, used meta-regression to identify covariates that predicted diagnostic accuracy. Only malignancy (likelihood ratio [LR], 2.71), previous DVT (LR, 2.25), recent immobilization (LR, 1.98), difference in calf diameter (LR, 1.80), and recent surgery (LR, 1.76) were useful for ruling in DVT, while only absence of calf swelling (LR, 0.67) or difference in calf diameter (LR, 0.57) was useful for ruling out DVT. The Wells clinical score was more valuable than the individual characteristics; it stratified patients into groups with high (LR, 5.2), intermediate, and low (LR, 0.25) probability of DVT, The Wells score seemed able to stratify patients by risk only for proximal DVT, and it performed better in cohorts that were younger or excluded patients with previous thromboembolism. Limitations: Pooled estimates were subject to substantial heterogeneity. This may limit extrapolation between observers and settings. Only published studies were included, so findings may be subject to publication bias. Conclusion: individual clinical features are of limited value in diagnosing DVT. Overall assessment of clinical probability by using the Wells score is more useful.

Keywords: Accuracy, Appropriate Indications, Assessment, Authors, Bias, Citation, Cochrane, D-Dimer Assay, Diagnosis, Duplex Ultrasonographic Examinations, Effectiveness, EMBASE, Emergency-Department, Extraction, Impedance Plethysmography, Journal, Lower-Limbs, Malignancy, Medline, Meta Analysis, Meta-Analysis, Model, Physical-Examination, Physicians, Predictive Value, Publication, Publication Bias, Ratio, Risk, Science, Sources, Surgery, Systematic, Thrombosis, Vein Thrombosis, Venous Thrombosis, Web of Science

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Full Text: [2006\Ann Int Med145, 185.pdf](2006/Ann%20Int%20Med145,%20185.pdf)

Abstract: Background: The risk for hypertension after kidney donation remains uncertain. Purpose: To see whether normotensive adults who donate a kidney develop higher blood pressure and risk for hypertension compared with nondonor adults acting as control participants. Data Sources: MEDLINE, EMBASE, and Science Citation Index were searched from 1966 until November 2005 for articles published in any language. Reference lists of pertinent articles were also reviewed. Study Selection: The authors selected studies involving 10 or more healthy normotensive adults who donated a kidney and in whom blood pressure was assessed at least 1 year later. Data Extraction: Two reviewers independently abstracted data on study and donor characteristics, blood pressure measurements, outcomes, and prognostic features. Comparison data were abstracted from donor studies with control participants. Thirty primary authors provided additional data. Data Synthesis: Forty-eight studies from 28 countries followed a total of 5145 donors. Before surgery, the average age of donors was 41 years, the average systolic blood pressure was 121 mm Hg, and the average diastolic blood pressure was 77 mm Hg for all studies. In controlled studies in which the average follow-up was at least 5 years after donation (range, 6 to 13 years), blood pressure was 5 mm Hg higher in donors than in control participants (the weighted mean for systolic blood pressure using 4 studies involving 157 donors and 128 control participants was 6 mm Hg [95% Cl, 2 to 11 mm Hg], and the weighted mean for diastolic blood pressure using 5 studies involving 196 donors and 161 control participants was 4 mm Hg [Cl, 1 to 7 mm Hg]). There was statistical heterogeneity among the 6 controlled studies that assessed hypertension; an increase in risk was noted in 1 study (relative risk, 1.9 [Cl, 1.1 to 3.5]). Limitations: Most studies were retrospective and did not include control groups that were assembled and followed along with donors. Approximately one third of the donors had incomplete follow-up information. Conclusions: On the basis of the limited studies conducted to date, kidney donors may have a 5-mm Hg increase in blood pressure within 5 to 10 years after donation over that anticipated with normal aging. Future controlled, prospective studies with long periods of follow-up will better delineate safety and identify donors at lowest risk for long-term morbidity.

Keywords: Aging, Articles, Blood-Pressure, Characteristics, Citation, Clinical-Trials, Donation, Extraction, Groups, Heterogeneity, Hypertension, Language, Long-Term, Medline, Meta-Analysis, Meta-Regression, Nephrectomy, Outcomes, Primary, Renal-Function, Risk, Science, Science Citation Index, Single Center, Sources, Surgery, Synthesis, Term-Follow-up, Transplantation

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Full Text: [2007\Ann Int Med146, 502.pdf](2007/Ann%20Int%20Med146,%20502.pdf)

Abstract: Background: Although abnormal screening mammograms deleteriously affect the psychological well-being of women during the time immediately surrounding the tests, their long-term effects are poorly understood. Purpose: To characterize the long-term effects of false-positive screening mammograms on the behavior and well-being of women 40 years of age or older. Data Sources: English-language studies from the MEDLINE, Web of Science, EMBASE, CINAHL, PsycINFO, and ERIC databases through August 2006. Study Selection: Studies were identified that examined the effects of false-positive results of routine screening mammography on women’s behavior, well-being, or beliefs. Data Extraction: Two investigators independently coded study charactedstics, quality, and effect sizes. Data Synthesis: 23 eligible studies (n = 313 967) were identified. A random-effects meta-analysis showed that U.S. women who received false-positive results on screening mammography were more likely to return for routine screening than those who received normal results (risk ratio, 1.07 [95% Cl, 1.02 to 1.121). The effect was not statistically significant among European women (risk ratio, 0.97 [Cl, 0.93 to 1,011), and Canadian women were less likely to return for routine screening because of false-positive results (risk ratio, 0.63 [Cl, 0.50 to 0.801). Women who received false-positive results conducted more frequent breast self-examinations and had higher, but not apparently pathologically elevated, levels of distress and anxiety and thought more about breast cancer than did those with normal results. Limitations: Correlational study designs, a small number of studies, a lack of clinical validation for many measures, and possible heterogeneity. Conclusions: Some women with false-positive results on mammography may have differences in whether they return for mammography, occurrence of breast self-examinations, and levels of anxiety compared with women with normal results. Future research should examine how false-positive results on mammography affect other outcomes, such as trust and health care use.

Keywords: Abnormal Mammograms, Anxiety, Breast Cancer, Breast Screening-Program, Cancer, Databases, Distress, EMBASE, Extraction, Follow-up, Health Care, Impact, Medline, Meta-Analysis, Normal, Outcomes, Psychological Consequences, Quality-of-Life, Ratio, Re-Attendance, Research, Review, Risk, Science, Screening, Services Task-Force, Sources, Systematic, Systematic Review, Validation, Web of Science, Women, Womens Anxieties

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Full Text: [2008\Ann Int Med148, 111.pdf](2008/Ann%20Int%20Med148,%20111.pdf)

Abstract: Background: Previous reviews have shown inconsistent effects of publicly reported performance data on quality of care, but many new studies have become available in the 7 years since the last systematic review. Purpose: To synthesize the evidence for using publicly reported performance data to improve quality. Data Sources: Web of Science, MEDLINE, EconLit, and Wilson Business Periodicals (1999-2006) and independent review of articles (1986-1999) identified in a previous systematic review. Only sources published in English were included. Study Selection: Peer-reviewed articles assessing the effects of public release of performance data on selection of providers, quality improvement activity, clinical outcomes (effectiveness, patient safety, and patient-centeredness), and unintended consequences. Data Extraction: Data on study participants, reporting system or level, study design, selection of providers, quality improvement activity, outcomes, and unintended consequences were extracted. Data Synthesis: Forty-five articles published since 1986 (27 of which were published since 1999) evaluated the impact of public reporting on quality. Many focus on a select few reporting systems. Synthesis of data from 8 health plan-level studies suggests modest association between public reporting and plan selection. Synthesis of 11 studies, all hospital-level, suggests stimulation of quality improvement activity. Review of 9 hospital-level and 7 individual provider-level studies shows inconsistent association between public reporting and selection of hospitals and individual providers. Synthesis of 11 studies, primarily hospital-level, indicates inconsistent association between public reporting and improved effectiveness. Evidence on the impact of public reporting on patient safety and patient-centeredness is scant. Limitations: Heterogeneity made comparisons across studies challenging. Only peer-reviewed, English-language articles were included. Conclusion: Evidence is scant, particularly about individual providers and practices. Rigorous evaluation of many major public reporting systems is lacking. Evidence suggests that publicly releasing performance data stimulates quality improvement activity at the hospital level. The effect of public reporting on effectiveness, safety, and patient-centeredness remains uncertain.

Keywords: Artery-Bypass-Surgery, Cardiac-Surgery, Cardiothoracic Surgeons, Consumer Reports, Effectiveness, Evaluation, Extraction, Health Plan Choices, Hospital, Hospital Performance, Hospitals, Impact, Market Share, Medline, New-York-State, Outcomes, Pay-For-Performance, Public Reporting, Publishing, Quality Improvement, Quality of Care, Review, Safety, Science, Sources, Systematic, Systematic Review, Unintended Consequences, Web of Science

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Full Text: [2008\Ann Int Med148, 519.pdf](2008/Ann%20Int%20Med148,%20519.pdf)

Abstract: Background: Lamivudine is increasingly being used to prevent hepatitis B reactivation in patients with cancer who test positive for hepatitis B surface antigen (HBsAg) and are undergoing chemotherapy. Purpose: To determine whether preventive lamivudine reduces chemotherapy-induced hepatitis B virus (HBV)-related morbidity and mortality in patients with cancer who test positive for HBsAg. Data Sources: MEDLINE, Ovid MEDLINE, TOXNET, Scopus, Web of Science, and Cochrane Central Register of Controlled Trials were searched in all languages until June 2007. Study Selection: Clinical trials and cohort studies that reported the efficacy of preventive lamivudine versus control on HBV reactivation in patients who tested positive for HBsAg and were receiving chemotherapy were included. Additional requirements included minimum sample size (>5 participants per treatment group) and reported HBV-related morbidity and mortality data. Data Extraction: Two investigators independently did literature searches and data extraction, and 2 other investigators independently confirmed study eligibility and data retrieval. Data Synthesis: Fourteen studies (2 randomized, controlled trials; 8 prospective cohort studies; and 4 retrospective cohort studies) met the predefined criteria for analysis. There were 275 patients in the preventive lamivudine group and 475 control participants for the primary end point of HBV reactivation. With preventive lamivudine, the relative risk for both HBV reactivation and HBV-related hepatitis ranged from 0.00 to 0.21. None of the patients in the preventive lamivudine group developed HBV-related hepatic failure (0 of 108 patients vs. 21 of 162 patients), and only 4 deaths were attributable to HBV (4 of 208 patients vs. 27 of 394 patients) in the preventive lamivudine group. Lamivudine was well tolerated, and no adverse effects were noted. Limitations: The studies included in the meta-analysis did not consistently report all of the outcomes of interest. Sample sizes were small and only 2 studies had a randomized, controlled design. Conclusion: Preventive therapy with lamivudine for patients who test positive for HBsAg and are undergoing chemotherapy may reduce the risk for HBV reactivation and HBV-associated morbidity and mortality.

Keywords: Adverse Effects, Analysis, Breast-Cancer Patients, Cancer, Carriers, Chemotherapy, Clinical Trials, Cochrane, Cohort Studies, Control, Cytotoxic Chemotherapy, Disease, Efficacy, Extraction, Hbv, Infection, Interest, Literature, Lymphoma, Medline, Meta-Analysis, Morbidity, Mortality, Outcomes, Preemptive Lamivudine, Primary, Prophylaxis, Relative Risk, Review, Risk, Science, Scopus, Sources, Systematic, Systematic Review, Therapy, Treatment, Virus Reactivation, Web of Science

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Full Text: [2008\Ann Int Med149, 879.pdf](2008/Ann%20Int%20Med149,%20879.pdf)

Abstract: Background: Both the 10-item Alcohol Use Disorders Identification Test (AUDIT) and its abbreviated 3-item version (Alcohol Use Disorders Identification Test-Consumption [AUDIT-C]) are considered to detect unhealthy alcohol use accurately. Purpose: To examine whether the AUDIT-C is as accurate as the full AUDIT for detecting unhealthy alcohol use in adults. Data Sources: MEDLINE, EMBASE, CINAHL, Web of Science, Psyc-INFO, and BIOSIS Previews from 1998 to July 2008. Study Selection: Three independent reviewers selected studies that administered both the AUDIT and the AUDIT-C, applied a valid reference standard, avoided verification and incorporation bias, and reported relevant data. No language restrictions were applied. Data Extraction: Two reviewers extracted study characteristics and outcome data, which were cross-checked by a third reviewer. One reviewer assessed methodological quality with a standardized checklist. Data Synthesis: Fourteen studies were found. Most involved primary care patients in Europe and the United States. Sample sizes ranged between 112 and 13 438 patients, and sex and age distributions varied considerably. No statistically significant differences were found between the overall accuracy of the AUDIT and the AUDIT-C for detecting risky drinking, alcohol use disorders, or unhealthy alcohol use in primary care. Hierarchical summary receiver-operating characteristic curve analysis yielded pooled positive likelihood ratios of 6.62 for the AUDIT and 2.99 for the AUDIT-C, respectively, for detecting risky drinking; 4.03 and 3.82, respectively, for detecting any alcohol use disorder; and 4.82 and 3.91, respectively, for detecting risky drinking or any alcohol use disorder. Findings from a few studies on general population samples and inpatients suggested but did not prove that the AUDIT might be better than the AUDIT-C for identifying severe conditions, such as alcohol dependence. Limitation: Studies used different reference standards and had heterogeneous findings. Conclusion: Available evidence is inconclusive but suggests that the full AUDIT may be superior to the AUDIT-C for identifying unhealthy alcohol use in adults in some settings.

Keywords: Accuracy, Adults, Alcohol, Alcohol Use Disorder, Analysis, At-Risk Drinking, Audit, Bias, Diagnostic-Test Accuracy, Disorder, Disorders Identification Test, EMBASE, Europe, Extraction, Hazardous Drinkers, Laboratory Tests, Medline, Meta Analysis, Meta-Analysis, Outcome, Primary, Primary Care, Primary-Care, Science, Screening-Test, Sources, Standards, Test Accuracy Evaluations, Test Audit, United-States, Web of Science

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Full Text: [2009\Ann Int Med150, 784.pdf](2009/Ann%20Int%20Med150,%20784.pdf)

Abstract: Background: Guidelines recommend that patients with heart failure receive beta-blockers in doses used in the trials that have proven their efficacy. Although the adverse effects of beta-blockade are dose-related, it is unclear whether the benefits are. Purpose: To determine whether the survival benefits of beta-blockade in heart failure are associated with the magnitude of heart rate reduction or the beta-blocker dose. Data Sources: MEDLINE, EMBASE, CINAHL, SIGLE, Web of Science, and the Cochrane Central Register of Controlled Trials, supplemented by hand-searches of bibliographies. Study Selection: Randomized, placebo-controlled heart failure trials that reported all-cause mortality. Data Extraction: Two reviewers independently extracted data on study characteristics, beta-blocker dosing and heart rate reduction, and death. Data Synthesis: The mean left ventricular ejection fraction in the 23 beta-blocker trials ranged from 0.17 to 0.36, and more than 95% of the 19 209 patients had systolic dysfunction. The overall risk ratio for death was 0.76 (95% CI, 0.68 to 0.84); however, heterogeneity testing revealed moderate heterogeneity among trials (I(2) = 30%), which was associated with the magnitude of heart rate reduction achieved within each trial (P for meta-regression = 0.006). For every heart rate reduction of 5 beats/min with beta-blocker treatment, a commensurate 18% reduction (CI, 6% to 29%) in the risk for death occurred. No significant relationship between all-cause mortality and beta-blocker dosing was observed (risk ratio for death, 0.74 [CI, 0.64 to 0.86]) in high-dose beta-blocker trials vs. 0.78 [CI, 0.63 to 0.96] in low-dose beta-blocker trials; P for meta-regression = 0.69). Limitations: The analysis is based on aggregate data and resting heart rates. Few patients in these trials had bradycardia or diastolic dysfunction at baseline. Conclusion: The magnitude of heart rate reduction is statistically significantly associated with the survival benefit of beta-blockers in heart failure, whereas the dose of beta-blocker is not.

Keywords: Adverse Effects, Analysis, Cardiac-Insufficiency Bisoprolol, Cochrane, Coronary-Artery-Disease, Double-Blind, Efficacy, Ejection Fraction, Elderly-Patients, EMBASE, Extraction, Heart Rate, Idiopathic Dilated Cardiomyopathy, Left-Ventricular Function, Medline, Meta Analysis, Meta-Analysis, Mortality, Placebo-Controlled Trial, Randomized Intervention Trial, Ratio, Reduction, Risk, Science, Sources, Survival, Systolic Dysfunction Beautiful, Treatment, Web of Science

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Full Text: [2009\Ann Int Med151, 252.pdf](2009/Ann%20Int%20Med151,%20252.pdf)

Abstract: Background: The rates of induction of labor and elective induction of labor are increasing. Whether elective induction of labor improves outcomes or simply leads to greater complications and health care costs is commonly debated in the literature. Purpose: To compare the benefits and harms of elective induction of labor and expectant management of pregnancy. Data Sources: MEDLINE (through February 2009), Web of Science, CINAHL, Cochrane Central Register of Controlled Trials (through March 2009), bibliographies of included studies, and previous systematic reviews. Study Selection: Experimental and observational studies of elective induction of labor reported in English. Data Extraction: Two authors abstracted study design; patient characteristics; quality criteria; and outcomes, including cesarean delivery and maternal and neonatal morbidity. Data Synthesis: of 6117 potentially relevant articles, 36 met inclusion criteria: 11 randomized, controlled trials (RCTs) and 25 observational studies. Overall, expectant management of pregnancy was associated with a higher odds ratio (OR) of cesarean delivery than was elective induction of labor (OR, 1.22 [95% CI, 1.07 to 1.39]; absolute risk difference, 1.9 percentage points [CI, 0.2 to 3.7 percentage points]) in 9 RCTs. Women at or beyond 41 completed weeks of gestation who were managed expectantly had a higher risk for cesarean delivery (OR, 1.21 [CI, 1.01 to 1.46]), but this difference was not statistically significant in women at less than 41 completed weeks of gestation (OR, 1.73 [CI, 0.67 to 4.5]). Women who were expectantly managed were more likely to have meconium-stained amniotic fluid than those who were electively induced (OR, 2.04 [CI, 1.34 to 3.09]). Limitations: There were no recent RCTs of elective induction of labor at less than 41 weeks of gestation. The 2 studies conducted at less than 41 weeks of gestation were of poor quality and were not generalizable to current practice. Conclusion: RCTs suggest that elective induction of labor at 41 weeks of gestation and beyond is associated with a decreased risk for cesarean delivery and meconium-stained amniotic fluid. There are concerns about the translation of these findings into actual practice; thus, future studies should examine elective induction of labor in settings where most obstetric care is provided.

Keywords: Authors, Cesarean Delivery, Clinical-Trial, Cochrane, Costs, Extraction, Gestational-Age, Health Care, Health Care Costs, Induced, Literature, Management, Matched Cohort, Medline, Morbidity, Multiparous Women, Nulliparous Women, Observational Studies, Outcomes, Points, Postterm Pregnancy, Practice, Pregnancy, Prolonged Pregnancy, Randomized Controlled-Trial, Ratio, Review, Risk, Science, Sources, Systematic, Systematic Review, Systematic Reviews, Translation, Web of Science, Women

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Full Text: [2009\Ann Int Med151, 703.pdf](2009/Ann%20Int%20Med151,%20703.pdf)

Abstract: Background: Trials demonstrate the efficacy of medications to reduce the risk for invasive breast cancer. Purpose: To summarize benefits and harms of tamoxifen citrate, raloxifene, and tibolone to reduce the risk for primary breast cancer. Data Sources: MEDLINE and Cochrane databases from inception to January 2009, Web of Science, trial registries, and manufacturer information. Study Selection: Predefined eligibility criteria were used to select articles. English-language reports of randomized, controlled trials (RCTs) for benefits and RCTs and observational studies for harms were included. Data Extraction: Two reviewers assessed study data, quality, and applicability. Data Synthesis: Seven placebo-controlled RCTs and 1 head-to-head trial provide results for main outcomes. Tamoxifen (risk ratio, 0.70 [95% CI, 0.59 to 0.82]; 4 trials), raloxifene (risk ratio, 0.44 [CI, 0.27 to 0.71]; 2 trials), and tibolone (risk ratio, 0.32 [CI, 0.13 to 0.80]; 1 trial) reduce risk for invasive breast cancer compared with placebo by 7 to 10 per 1000 women per year. Tamoxifen and raloxifene reduce estrogen receptor-positive breast cancer but not estrogen receptor-negative breast cancer, noninvasive breast cancer, or mortality. All medications reduce fractures. Tamoxifen (risk ratio, 1.93 [CI, 1.41 to 2.64]; 4 trials) and raloxifene (risk ratio, 1.60 [CI, 1.15 to 2.23]; 2 trials) increase thromboembolic events by 4 to 7 per 1000 women per year; raloxifene causes fewer events than tamoxifen. Tamoxifen increases risk for endometrial cancer (risk ratio, 2.13 [CI, 1.36 to 3.32]; 3 trials) compared with placebo by 4 per 1000 women per year and causes cataracts compared with raloxifene. Tibolone causes strokes in older women. Limitations: Bias, trial heterogeneity, and a dearth of head-to-head trials limit this review. Data are lacking on doses, duration, and timing of the medications; long-term effects; and nonwhite and premenopausal women. Conclusion: Three medications reduce risk for primary breast cancer but increase risk for thromboembolic events (tamoxifen, raloxifene), endometrial cancer (tamoxifen), or stroke (tibolone).

Keywords: Bias, Bone-Mineral Density, Bowel Project P-1, Breast Cancer, Cancer, Cochrane, Continuing Outcomes Relevant, Databases, Effectiveness, Efficacy, Estrogen, Extraction, Healthy Postmenopausal Women, Hormone-Replacement Therapy, Information, Medline, Mortality, Observational Studies, Outcomes, Prevention Trial, Primary, Quality-of-Life, Randomized Controlled-Trial, Ratio, Review, Risk, Science, Sources, Stroke, Surgical Adjuvant Breast, Systematic, Systematic Review, Vertebral Fracture Risk, Web of Science, Women

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Full Text: [2009\Ann Int Med151, 727.pdf](2009/Ann%20Int%20Med151,%20727.pdf)

Abstract: Background: This systematic review is an update of evidence since the 2002 U. S. Preventive Services Task Force recommendation on breast cancer screening. Purpose: To determine the effectiveness of mammography screening in decreasing breast cancer mortality among average-risk women aged 40 to 49 years and 70 years or older, the effectiveness of clinical breast examination and breast self-examination, and the harms of screening. Data Sources: Cochrane Central Register of Controlled Trials and Cochrane Database of Systematic Reviews (through the fourth quarter of 2008), MEDLINE (January 2001 to December 2008), reference lists, and Web of Science searches for published studies and Breast Cancer Surveillance Consortium for screening mammography data. Study Selection: Randomized, controlled trials with breast cancer mortality outcomes for screening effectiveness, and studies of various designs and multiple data sources for harms. Data Extraction: Relevant data were abstracted, and study quality was rated by using established criteria. Data Synthesis: Mammography screening reduces breast cancer mortality by 15% for women aged 39 to 49 years (relative risk, 0.85 [95% credible interval, 0.75 to 0.96]; 8 trials). Data are lacking for women aged 70 years or older. Radiation exposure from mammography is low. Patient adverse experiences are common and transient and do not affect screening practices. Estimates of overdiagnosis vary from 1% to 10%. Younger women have more false-positive mammography results and additional imaging but fewer biopsies than older women. Trials of clinical breast examination are ongoing; trials for breast self-examination showed no reductions in mortality but increases in benign biopsy results. Limitation: Studies of older women, digital mammography, and magnetic resonance imaging are lacking. Conclusion: Mammography screening reduces breast cancer mortality for women aged 39 to 69 years; data are insufficient for older women. False-positive mammography results and additional imaging are common. No benefit has been shown for clinical breast examination or breast self-examination.

Keywords: Age 40, Aged, Breast Cancer, Cancer, Cochrane, Effectiveness, Extraction, Follow-up, Imaging, Magnetic Resonance Imaging, Mammography, Mammography Screening, Medline, Mortality, Outcomes, Overdiagnosis, Radiation, Randomized-Trial, Relative Risk, Review, Risk, Science, Screening, Self-Examination, Sources, Swedish 2-County Trial, Systematic, Systematic Review, United-States, US, Web of Science, Women

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Full Text: [2010\Ann Int Med152, 26.pdf](2010/Ann%20Int%20Med152,%2026.pdf)

Abstract: Background: The Revised Cardiac Risk Index (RCRI) is widely used to predict perioperative cardiac complications. Purpose: To evaluate the ability of the RCRI to predict cardiac complications and death after noncardiac surgery. Data Sources: MEDLINE, EMBASE, and ISI Web of Science (1966 to 31 December 2008). Study Selection: Cohort studies that reported the association of the RCRI with major cardiac complications (cardiac death, myocardial infarction, and nonfatal cardiac arrest) or death in the hospital or within 30 days of surgery. Data Extraction: Two reviewers independently extracted study characteristics, documented outcome data, and evaluated study quality. Data Synthesis: of 24 studies (792 740 patients), 18 reported cardiac complications; 6 of the 18 studies were prospective and had uniform outcome surveillance and blinded outcome adjudication. The RCRI discriminated moderately well between patients at low versus high risk for cardiac events after mixed noncardiac surgery (area under the receiver-operating characteristic curve [AUC], 0.75 [95% CI, 0.72 to 0.79]); sensitivity, 0.65 [CI, 0.46 to 0.81]; specificity, 0.76 [CI, 0.58 to 0.88]; positive likelihood ratio, 2.78 [CI, 1.74 to 4.45]; negative likelihood ratio, 0.45 [CI, 0.31 to 0.67]). Prediction of cardiac events after vascular noncardiac surgery was less accurate (AUC, 0.64 [CI, 0.61 to 0.66]; sensitivity, 0.70 [CI, 0.53 to 0.82]; specificity, 0.55 [CI, 0.45 to 0.66]; positive likelihood ratio, 1.56 [CI, 1.42 to 1.73]; negative likelihood ratio, 0.55 [CI, 0.40 to 0.76]). Six studies reported death, with a median AUC of 0.62 (range, 0.54 to 0.78). A pooled AUC for predicting death could not be calculated because of very high heterogeneity (I(2) = 95%). Limitation: Studies generally were of low methodological quality, had varied definitions of cardiac events, and were statistically and clinically heterogeneous. Conclusion: The RCRI discriminated moderately well between patients at low versus high risk for cardiac events after mixed noncardiac surgery. It did not perform well at predicting cardiac events after vascular noncardiac surgery or at predicting death. High-quality research is needed in this area of perioperative medicine.

Keywords: Abdominal Aortic-Aneurysms, Beta-Blocker Therapy, Cardiac Arrest, Complications, Definitions, Diagnostic-Test Accuracy, Elderly-Patients, EMBASE, Extraction, Hospital, ISI, Major Noncardiac Surgery, Medicine, Medline, Mortality, Myocardial Infarction, Myocardial-Infarction, Natriuretic Peptide, Outcome, Prediction, Randomized Controlled-Trial, Ratio, Research, Review, Risk, Science, Sources, Surgery, Surveillance, Systematic, Systematic Review, Troponin-I, Vascular-Surgery, Web of Science

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Full Text: [2010\Ann Int Med152, 167.pdf](2010/Ann%20Int%20Med152,%20167.pdf)

Abstract: Background: Two imaging techniques, multislice computed tomography (CT) and magnetic resonance imaging (MRI), have evolved for noninvasive coronary angiography. Purpose: To compare CT and MRI for ruling out clinically significant coronary artery disease (CAD) in adults with suspected or known CAD. Data Sources: MEDLINE, EMBASE, and ISI Web of Science searches from inception through 2 June 2009 and bibliographies of reviews. Study Selection: Prospective English-or German-language studies that compared CT or MRI with conventional coronary angiography in all patients and included sufficient data for compilation of 2 x 2 tables. Data Extraction: 2 investigators independently extracted patient and study characteristics; differences were resolved by consensus. Data Synthesis: 89 and 20 studies (comprising 7516 and 989 patients) assessed CT and MRI, respectively. Bivariate analysis of data yielded a mean sensitivity and specificity of 97.2% (95% CI, 96.2% to 98.0%) and 87.4% (CI, 84.5% to 89.8%) for CT and 87.1% (CI, 83.0% to 90.3%) and 70.3% (CI, 58.8% to 79.7%) for MRI. In studies that included only patients with suspected CAD, sensitivity and specificity of CT were 97.6% (CI, 96.1% to 98.5%) and 89.2% (CI, 86.0% to 91.8%). Covariate analysis yielded a significantly higher sensitivity for CT scanners with more than 16 rows (98.1% [CI, 97.0% to 99.0%]; P < 0.050) than for older-generation scanners (95.6% [CI, 94.0% to 97.0%]). Heart rates less than 60 beats/min during CT yielded significantly better values for sensitivity than did higher heart rates (P < 0.001). Limitations: Few studies investigated coronary angiography with MRI. Only 5 studies were direct head-to-head comparisons of CT and MRI. Covariate analyses explained only part of the observed heterogeneity. Conclusion: For ruling out CAD, CT is more accurate than MRI. Scanners with more than 16 rows improve sensitivity, as do slowed heart rates.

Keywords: Adults, Analysis, Aortic-Valve Stenosis, Artery-Disease, CT, Diagnostic-Test Accuracy, Disease, Dual-Source CT, EMBASE, Extraction, Heart-Rate-Variability, Imaging, ISI, Left-Ventricular Function, Magnetic Resonance Imaging, Medline, Meta Analysis, Meta-Analysis, MRI, Multidetector Row CT, Science, Sensitivity and Specificity, Sources, Stable Angina-Pectoris, Symptomatic Patients, Web of Science, X-Ray Angiography

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Full Text: [2010\Ann Int Med152, 247.pdf](2010/Ann%20Int%20Med152,%20247.pdf)

Abstract: Background: Whether collaborative care models that enable interactive communication (timely, 2-way exchange of pertinent clinical information directly between primary care and specialist physicians) improve patient outcomes is uncertain. Purpose: To assess the effects of interactive communication between collaborating primary care physicians and key specialists on outcomes for patients receiving ambulatory care. Data Sources: PUBMED, PsycInfo, EMBASE, CINAHL, Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effects, and Web of Science through June 2008 and secondary references, with no language restriction. Study Selection: Studies that evaluated the effects of interactive communication between collaborating primary care physicians and specialists on outcomes for patients with diabetes, psychiatric conditions, or cancer. Data Extraction: Contextual, intervention, and outcome data from 23 studies were extracted by one reviewer and checked by another. Study quality was assessed with a 13-item checklist. Disagreement was resolved by consensus. Main outcomes for analysis were selected by reviewers who were blinded to study results. Data Synthesis: Meta-analysis indicated consistent effects across 11 randomized mental health studies (pooled effect size, -0.41 [95% CI, -0.73 to -0.10]), 7 nonrandomized mental health studies (pooled effect size, -0.47 [CI, -0.84 to -0.09]), and 5 nonrandomized diabetes studies (pooled effect size, -0.64 [CI, -0.93 to -0.34]). These findings remained robust to sensitivity analyses. Meta-regression indicated studies that included interventions to enhance the quality of information exchange had larger effects on patient outcomes than those that did not (-0.84 vs. -0.27; P = 0.002). Limitations: Because collaborative interventions were inherently multifaceted, the efficacy of interactive communication by itself cannot be established. Inclusion of study designs with lower internal validity increased risk for bias. No studies involved oncologists. Conclusion: Consistent and clinically important effects suggest a potential role of interactive communication for improving the effectiveness of primary care-specialist collaboration.

Keywords: Ambulatory Care, Analysis, Bias, Cancer, Care, Clinical-Trials, Cochrane, Collaboration, Communication, Diabetes, Diabetes Care, Disease Management Program, Effectiveness, Efficacy, EMBASE, Extraction, General-Practice, Information, Intervention, Interventions, Liaison Psychiatry, Mental Health, Mental-Health-Services, Meta Analysis, Meta-Analysis, Outcome, Outcomes, Patient Outcomes, Physicians, Primary, Primary Care, Psychiatric-Consultation, PUBMED, Quality Improvement, Randomized Controlled-Trial, Risk, Science, Sources, Systematic, United-States, Validity, Web of Science

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Full Text: [2010\Ann Int Med153, 99.pdf](2010/Ann%20Int%20Med153,%2099.pdf)

Abstract: Background: This review updates evidence since the 2002 U. S. Preventive Services Task Force recommendation on osteoporosis screening. Purpose: To determine the effectiveness and harms of osteoporosis screening in reducing fractures for men and postmenopausal women without known previous fractures; the performance of risk-assessment instruments and bone measurement tests in identifying persons with osteoporosis; optimal screening intervals; and the efficacy and harms of medications to reduce primary fractures. Data Sources: Cochrane Central Register of Controlled Trials and Cochrane Database of Systematic Reviews (through the fourth quarter of 2009), MEDLINE (January 2001 to December 2009), reference lists, and Web of Science. Study Selection: Randomized, controlled trials of screening or medications with fracture outcomes published in English; performance studies of validated risk-assessment instruments; and systematic reviews and population-based studies of bone measurement tests or medication harms. Data Extraction: Data on patient populations, study design, analysis, follow-up, and results were abstracted, and study quality was rated by using established criteria. Data Synthesis: Risk-assessment instruments are modest predictors of low bone density (area under the curve, 0.13 to 0.87; 14 instruments) and fractures (area under the curve, 0.48 to 0.89; 11 instruments); simple and complex instruments perform similarly. Dual-energy x-ray absorptiometry predicts fractures similarly for men and women; calcaneal quantitative ultrasonography also predicts fractures, but correlation with dual-energy x-ray absorptiometry is low. For postmenopausal women, bisphosphonates, parathyroid hormone, raloxifene, and estrogen reduce primary vertebral fractures. Trials are lacking for men. Bisphosphonates are not consistently associated with serious adverse events; raloxifene and estrogen increase thromboembolic events; and estrogen causes additional adverse events. Limitation: Trials of screening with fracture outcomes, screening intervals, and medications to reduce primary fractures, particularly those enrolling men, are lacking. Conclusion: Although methods to identify risk for osteoporotic fractures are available and medications to reduce fractures are effective, no trials directly evaluate screening effectiveness, harms, and intervals.

Keywords: Analysis, Bisphosphonates, Bone, Bone-Mineral Density, Cochrane, Conjugated Equine Estrogens, Cyclical Etidronate Therapy, Early Postmenopausal Women, Effectiveness, Efficacy, Estrogen, Estrogen Plus Progestin, Extraction, Follow-up, Fracture, Hormone Replacement Therapy, Initiative Randomized-Trial, Measurement, Medication, Medline, Osteoporosis, Outcomes, Placebo-Controlled Trial, Primary, Quantitative, Review, Risk, Risk Assessment, Science, Screening, Sources, Systematic, Systematic Reviews, Ultrasonography, US, Vertebral Fracture Risk, Web of Science, Women, X-Ray Absorptiometry

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Full Text: [2010\Ann Int Med153, 112.pdf](2010/Ann%20Int%20Med153,%20112.pdf)

Abstract: Background: Anecdotal reports suggest that some residency application essays contain plagiarized content. Objective: To determine the prevalence of plagiarism in a large cohort of residency application essays. Design: Retrospective cohort study. Setting: 4975 application essays submitted to residency programs at a single large academic medical center between 1 September 2005 and 22 March 2007. Measurements: Specialized software was used to compare residency application essays with a database of Internet pages, published works, and previously submitted essays and the percentage of the submission matching another source was calculated. A match of more than 10% to an existing work was defined as evidence of plagiarism. Results: Evidence of plagiarism was found in 5.2% (95% CI, 4.6% to 5.9%) of essays. The essays of non-U.S. citizens were more likely to demonstrate evidence of plagiarism. Other characteristics associated with the prevalence of plagiarism included medical school location outside the United States and Canada; previous residency or fellowship; lack of research experience, volunteer experience, or publications; a low United States Medical Licensing Examination Step 1 score; and nonmembership in the Alpha Omega Alpha Honor Medical Society. Limitations: The software database is probably incomplete, the 10%-match threshold for defining plagiarism has not been statistically validated, and the study was confined to applicants to 1 institution. Evidence of matching content in an essay cannot be used to infer the applicant’s intent and is not sensitive to variations in the cultural context of copying in some societies. Conclusion: Evidence of plagiarism in residency application essays is more common in international applicants but was found in those by applicants to all specialty programs, from all medical school types, and even among applicants with significant academic honors.

Keywords: Canada, Essays, Misrepresentation, Plagiarism, Publications, Research, Research Publications, Students, Subsequent Disciplinary Action

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Full Text: [2010\Ann Int Med153, 128.pdf](2010/Ann%20Int%20Med153,%20128.pdf)

Keywords: Admissions, Boards, Disciplinary Action, Medical-School, Plagiarism

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Full Text: [2010\Ann Int Med153, 592.pdf](2010/Ann%20Int%20Med153,%20592.pdf)

Abstract: Background: Implantable cardioverter-defibrillators (ICDs) for the primary prevention of sudden cardiac death have been proven effective in several clinical trials. Purpose: To summarize evidence about the effectiveness of ICDs versus standard medical therapy for the primary prevention of sudden cardiac death in different age groups of patients with severe left ventricular dysfunction. Data Sources: MEDLINE, EMBASE, CENTRAL, BioMed Central, Cardiosource, ClinicalTrials.gov, and ISI Web of Science (January 1970 to April 2010) were searched with no language restrictions. Study Selection: Two independent reviewers screened titles and abstracts to identify randomized, controlled trials of prophylactic ICD versus medical therapy in patients with severe left ventricular dysfunction that provided data about mortality outcomes for different age groups. Data Extraction: Two independent reviewers assessed risk for bias of trials and extracted patient and study characteristics and hazard ratios (HRs) relevant to all-cause mortality. Data Synthesis: Five trials (MADIT-II, DEFINITE, DINAMIT, SCD-HeFT, and IRIS) that enrolled 5783 patients (44% were elderly) were included. The primary analysis, which excluded the 2 trials enrolling patients early after acute myocardial infarction (DINAMIT and IRIS), found that prophylactic ICD therapy reduced mortality in younger patients (HR, 0.65 [95% CI, 0.50 to 0.83]; P < 0.001). A smaller and statistically nonsignificant survival benefit was found in elderly patients (HR, 0.81 [CI, 0.62 to 1.05]; P = 0.11). The inclusion of data from DINAMIT and IRIS did not change these results. Limitations: Four potentially eligible trials were not included in the meta-analysis because mortality data by age group were not available. Adjustment for differences in comorbid conditions and medical therapies among patients enrolled in the trials was not possible. Conclusion: Available data do not conclusively show that prophylactic ICD therapy improves survival in elderly patients with severe left ventricular dysfunction.

Keywords: Acute Myocardial Infarction, Age, Analysis, Bias, Cardiac-Resynchronization Therapy, Clinical Trials, Effectiveness, Elderly, Elderly-Patients, Extraction, Heart-Failure, High-Risk, Improved Survival, ISI, Madit-II, Medical, Medline, Meta Analysis, Meta-Analysis, Mortality, Myocardial Infarction, Myocardial-Infarction, Nonischemic Dilated Cardiomyopathy, Outcomes, Prevention, Primary, Primary Prevention, Risk, Science, Sources, Sudden-Death, Survival, Therapy, Ventricular-Arrhythmias, Web of Science

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Full Text: [2010\Ann Int Med153, 766.pdf](2010/Ann%20Int%20Med153,%20766.pdf)

Keywords: Plagiarism

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Full Text: [2010\Ann Int Med153, 766.pdf](2010/Ann%20Int%20Med153,%20766.pdf)

Keywords: Plagiarism

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Full Text: [2010\Ann Int Med153, 766.pdf](2010/Ann%20Int%20Med153,%20766.pdf)

Keywords: Plagiarism

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Full Text: [2010\Ann Int Med153, 766.pdf](2010/Ann%20Int%20Med153,%20766.pdf)

Keywords: Plagiarism

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Full Text: [2010\Ann Int Med153, 766.pdf](2010/Ann%20Int%20Med153,%20766.pdf)

Keywords: Plagiarism

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Full Text: [2010\Ann Int Med153, 847.pdf](2010/Ann%20Int%20Med153,%20847.pdf)

Keywords: Plagiarism

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Full Text: [2011\Ann Int Med154, 243.pdf](2011/Ann%20Int%20Med154,%20243.pdf)

Abstract: Background: Acute ischemic strokes are associated with poor outcomes and high health care burden. Evidence exists evaluating the use of neurothrombectomy devices in patients receiving currently recommended treatments that may have limited efficacy. Purpose: To describe the state of the evidence supporting use of neurothrombectomy devices in the treatment of acute ischemic stroke. Data Sources: MEDLINE, SCOPUS, the Cochrane Central Register of Controlled Trials, the Cochrane Database of Systematic Reviews, and Web of Science were searched, without language restrictions, from their inception through May 2010. The MEDLINE and Cochrane Central Register of Controlled Trials searches were updated through November 2010. Study Selection: Two independent investigators screened citations for human studies of any design or case series or case reports of patients with an acute ischemic stroke that evaluated a neurothrombectomy device and reported at least 1 clinical effectiveness outcome or harm. Data Extraction: Using standardized protocols, 2 independent investigators extracted information about study characteristics and outcomes, and a third reviewer resolved disagreement. Data Synthesis: 87 articles met eligibility criteria, including 18 prospective single-group studies, 7 noncomparative retrospective studies, and 62 case series or case reports. Two U. S. Food and Drug Administration (FDA)-cleared devices, the MERCI Retriever (Concentric Medical, Mountain View, California) (40%) and the Penumbra System (Penumbra, Alameda, California) (9%), represented a large portion of the available data. All prospective and retrospective studies provided data on successful recanalization with widely varying rates (43% to 78% with the MERCI Retriever and 83% to 100% with the Penumbra System). Rates of harms, including symptomatic (16 studies; 0% to 10% with the MERCI Retriever and 0% to 11% with the Penumbra System) or asymptomatic (13 studies; 28% to 43% and 1% to 30%, respectively) intracranial hemorrhage and vessel perforation or dissection (11 studies; 0% to 7% and 0% to 5%, respectively), also varied by device. Predictors of harm included older age, history of stroke, and higher baseline stroke severity scores, whereas successful recanalization was the sole predictor of good outcomes. Limitations: Most available data are from single-group, noncomparative studies. In addition, the patient population most likely to benefit from these devices is undetermined. Conclusion: Currently available neurothrombectomy devices offer intriguing treatment options in patients with acute ischemic stroke. Future trials should use a randomized design, with adequate power to show equivalency or noninferiority between competing strategies or devices, and strive to identify populations that are most likely to benefit from use of neurothrombectomy devices.

Keywords: AB Device, Administration, Burden, Case Reports, Case Series, Center Experience, Citations, Clinical Effectiveness, Cochrane, Effectiveness, Efficacy, Extraction, Health Care, History, Human, III Trial, Information, Interventional Management, Mechanical Thrombectomy, Medline, Merci Clot Retriever, Outcome, Outcomes, Penumbra System, Pooled Analysis, Recanalization, Science, Scopus, Sources, Stroke, Systematic, Tissue-Plasminogen-Activator, Treatment, Web of Science

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Full Text: [2011\Ann Int Med155, 520.pdf](2011/Ann%20Int%20Med155,%20520.pdf)

Abstract: Background: About 1 in 5 Medicare fee-for-service patients discharged from the hospital is rehospitalized within 30 days. Beginning in 2013, hospitals with high risk-standardized readmission rates will be subject to a Medicare reimbursement penalty. Purpose: To describe interventions evaluated in studies aimed at reducing rehospitalization within 30 days of discharge. Data Sources: MEDLINE, EMBASE, Web of Science, and the Cochrane Library were searched for reports published between January 1975 and January 2011. Study Selection: English-language randomized, controlled trials; cohort studies; or noncontrolled before-after studies of interventions to reduce rehospitalization that reported rehospitalization rates within 30 days. Data Extraction: 2 reviewers independently identified candidate articles from the results of the initial search on the basis of title and abstract. Two 2-physician reviewer teams reviewed the full text of candidate articles to identify interventions and assess study quality. Data Synthesis: 43 articles were identified, and a taxonomy was developed to categorize interventions into 3 domains that encompassed 12 distinct activities. Predischarge interventions included patient education, medication reconciliation, discharge planning, and scheduling of a follow-up appointment before discharge. Postdischarge interventions included follow-up telephone calls, patient-activated hotlines, timely communication with ambulatory providers, timely ambulatory provider follow-up, and postdischarge home visits. Bridging interventions included transition coaches, physician continuity across the inpatient and outpatient setting, and patient-centered discharge instruction. Limitations: Inadequate description of individual studies’ interventions precluded meta-analysis of effects. Many studies identified in the review were single-institution assessments of quality improvement activities rather than those with experimental designs. Several common interventions have not been studied outside of multicomponent “discharge bundles.” Conclusion: No single intervention implemented alone was regularly associated with reduced risk for 30-day rehospitalization.

Keywords: Activities, Care Transitions Intervention, Clinical-Trial, Cochrane, Cohort Studies, Communication, Early Readmission, Education, Embase, Experimental, Extraction, Follow-Up, Heart-Failure, High-Risk, Hospital, Hospital Discharge, Hospitals, Impact, Intervention, Interventions, Medicare, Medication, Medline, Meta Analysis, Meta-Analysis, Older-Adults, Patient Education, Patients, Quality Improvement, Randomized Controlled-Trial, Review, Risk, Science, Selection, Sources, Synthesis, Systematic, Systematic Review, Web of Science

# Title: Annals of Library and Information Studies

Full Journal Title: [Annals of Library and Information Studies](http://www.niscom.res.in/ScienceCommunication/ResearchJournals/rejour/annals/annals0.asp)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0972-5423

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Sivasubramanian, V. (2000), Journal of Indian Coffee: A bibliometric. *Annals of Library and Information Studies*, **47** (2), 75-??.

Full Text: Ann Lib Inf Stu47, 75.pdf

? Sen, B.K. and Das, A.K. (2002), INSDOC’s contribution to bibliometrics. *Annals of Library and Information Studies*, **49** (1), 1-6.

Full Text: [2002\Ann Lib Inf Stu49, 1.pdf](2002/Ann%20Lib%20Inf%20Stu49,%201.pdf)

Abstract: Traces the history of bibliometric research, and related training activities in INSDOC. Describes briefly the objectives, facilities, services, research activities, and publications of National Centre on Bibliometrics.

# Title: Annals of Library Science and Documentation

Full Journal Title: Annals of Library Science and Documentation

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Maheswarappa, B.S. and Surya Rao, K. (1982), Journal literature of food science and technology: A bibliometric study. *Annals of Library Science and Documentation*, **29** (3), 126-134.

Full Text: Ann Lib Sci Doc29, 126.pdf

Abstract: Approx. 325 organizations have been identified as engaged in food science and technology research worldwide, and the proliferation and increasing vol. of the literature is reflected by changes in the FSTA journal coverage and number of abstracts in the period 1969 to 1981, rising from 1000 to 1700 and from 11 980 to 17 581, resp. A study aimed at identifying the main bibliographic forms, the core journals, the country of origin, the literature obsolescence rate and the applicability of Bradford’s Law was undertaken by analysing the citations given in all articles in 3 major journals, viz. Journal of Food Science; Journal of Food Science and Technology, India; and Journal of Food Technology, for the period Jan. to June 1980. 74% of citations were of periodical literature, with books the next largest source at 14%. In a total of 4570 citations, 62 journals were cited >=10 times; these titles are listed in rank order as core journals, with their country of origin as identified from periodical directories. A plot of cumulative total citations against quinquennial period of origin showed that half the citations were <=7 yr old; i.e. the half-life of the literature is 7 yr.

Rana, M.S. and Agarwal, S. (1994), Authorship trends in Indian wildlife and fisheries literature: A bibliometric study. *Annals of Library Science and Documentation*, **41** (1), 13-18.

Full Text: [1994\Ann Lib Sci Doc41, 13.pdf](1994/Ann%20Lib%20Sci%20Doc41,%2013.pdf)

Abstract: The authorship and collaborative research patterns in Indian wildlife and fisheries based on the data collected from “Wildlife Review and Fish Review” published bettween 1980 to 1989 are studied. The proportion of single authored papers has decreased from 63.68% in 1980 to 52.74% in 1989. During the same period there was an increase in the average number of authors per paper from 1.57 in 1980 to 1.70 in 1989. The degree of collaborative research also increased from 0.36 to 0.47.

Keywords: Authorship Patterns, Collaborative Research Patterns, Indian Wildlife and Fisheries, Wildlife Review and Fish Review

? Arora, J. and Kaur, S.P. (1994), Bibliometric analysis of core journals on immunology: A study based on the annual review of immunology. *Annals of Library Science and Documentation*, **41** (3), 81-94.

Full Text: Ann Lib Sci Doc41, 13.pdf

Abstract: Bibliometric study on core journals on immunology derived from citations collected from the Annual Review of Immunology for four consecutive years, i.e. 1983 to 1986 reveals very high concentration of literature in a few scintific journals. The first four core journals contribute 47.96% of total citations while the first two top-ranked journals account for close to 30% of total citations. In addition to determining country, subject, physical format chronological and language distribution of core journals in immunology, the half-life and citation peak of journals in immunology have also been worked out. The scattering of literature in immunology is determined by applying Bradford’s Law. The core journals in immunology and other disciplines of biomedical sciences are also compared.

Keywords: Immunology, Microbiology, Research, Citation Analysis, Bibliometric Analysis, Method, Core Collection, International Publication, Evaluation, Scientific Research, Bibliometrics

Kalyane, V.L. and Sen, B.K. (1995), Bibliometric study of the *Journal of Oilseeds Research*. *Annals of Library Science and Documentation*, **42** (4), 121-141.

Full Text: [1995\Ann Lib Sci Doc42, 121.pdf](1995/Ann%20Lib%20Sci%20Doc42,%20121.pdf)

Keywords: Bibliometrics, Scientometrics, Bradford’s law, Lotka’s law

? Biradar, B.S. and Vijayalaxmi, T. (1997), Pattern of information use by Indian neurological scientists: A bibliometric study. *Annals of Library Science and Documentation*, **44** (4), 143-151.

Full Text: Ann Lib Sci Doc44, 143.pdf

Devarai, R.S., Ramesh, L.S.R.C.V. and Hussain, M.V. (1998), Informetrics on M. N. Srinivas. *Annals of Library Science and Documentation*, **45** (4), 125-135.

Full Text: [1998\Ann Lib Sci Doc45, 125.pdf](1998/Ann%20Lib%20Sci%20Doc45,%20125.pdf)

Abstract: M. N. Srinivas, the well known sociologist is widely recognised as architect of modern Indian sociology and social anthropology. His publications have been analysed by year, domain, authorship pattern, channels of communication used. Keywords, etc. The results indicate that the papers published by him are of a nature that qualify him to be a ‘role model’ for the younger generations to emulate.

By the end of 1995, Srinivas had to his credit 144 papers which, included 33 broad papers in sociology and anthropology; 18 papers in social change; 28 papers in village studies; 12 papers on religion; 17 papers on caste and 36 papers of general popular interest. The periods 1958-61 and 1974-77, when Srinivas was 38-41 and 58-61 years old. were his most productive periods with highest publication activity.

Keywords: Informetrics, M.N. Srinivas, Publication Productivity, Biographical Bibliometrics, Individual Scientists, Publication Productivity, Scientometrics, Science of Science, Biobibliometrics, Scientific Research Output

# Title: Annals of Mathematical Statistics

Full Journal Title: [Annals of Mathematical Statistics](http://uk.jstor.org/journals/00034851.html)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lotka, A.J. (1939), A contribution to the theory of self-renewing aggregates, with special reference to industrial replacement. *Annals of Mathematical Statistics*, **10** (1), 1-25.

Full Text: [-1959\Ann Mat Sta10, 1.pdf](-1959/Ann%20Mat%20Sta10,%201.pdf)

? Lotka, A.J. (1939), On an integral equation in population analysis. *Annals of Mathematical Statistics*, **10** (2), 144-161.

Full Text: [-1959\Ann Mat Sta10, 144.pdf](-1959/Ann%20Mat%20Sta10,%20144.pdf)

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Full Text: [-1959\Ann Mat Sta13, 115.pdf](-1959/Ann%20Mat%20Sta13,%20115.pdf)

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Full Text: [-1959\Ann Mat Sta19, 190.pdf](-1959/Ann%20Mat%20Sta19,%20190.pdf)

# Title: Annals of Mathematics

Full Journal Title: [Annals of Mathematics](http://www.jstor.org/journals/0003486x.html)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Osgood, W.F. (1900), Sufficient conditions in the Calculus of Variations. *Annals of Mathematics*, **2** (1), 105-129.

Full Text: [-1959\Ann Mat2, 105.pdf](-1959/Ann%20Mat2,%20105.pdf)

Notes: highly cited

? Einstein, A., Infeld, L. and Hoffmann, B. (1938), The gravitational equations and the problem of motion. *Annals of Mathematics*, **39** (1), 65-100.

Full Text: [-1959\Ann Mat39, 65.pdf](-1959/Ann%20Mat39,%2065.pdf)

Notes: highly cited

? Einstein, A. and Bergmann, P. (1938), On a generalization of Kaluza’s theory of electricity. *Annals of Mathematics*, **39** (3), 683-701.

Full Text: [-1959\Ann Mat39, 683.pdf](-1959/Ann%20Mat39,%20683.pdf)

Keywords: theory

Notes: highly cited

? Einstein, A. (1939), On a stationary system with spherical symmetry consisting of many gravitating masses. *Annals of Mathematics*, **40** (4), 922-936.

Full Text: [-1959\Ann Mat40, 922.pdf](-1959/Ann%20Mat40,%20922.pdf)

Notes: highly cited

? Einstein, A. (1945), A generalization of the relativistic theory of gravitation. *Annals of Mathematics*, **46** (4), 578-584.

Full Text: [-1959\Ann Mat46, 578.pdf](-1959/Ann%20Mat46,%20578.pdf)

Notes: highly cited

? Einstein, A. and Straus, E.G. (1946), A generalization of the relativistic theory of gravitation, II. *Annals of Mathematics*, **47** (4), 731-741.

Full Text: [-1959\Ann Mat47, 731.pdf](-1959/Ann%20Mat47,%20731.pdf)

# Title: Annals of Medicine

Full Journal Title: [Annals of Medicine](http://www.tandf.co.uk/journals/titles/07853890.html)

ISO Abbreviated Title: Ann. Med.

JCR Abbreviated Title: Ann Med

ISSN: 0785-3890

Issues/Year: 6

Journal Country/Territory: Finland

Language: English

Publisher: Royal Soc Medicine Press Ltd

Publisher Address: 1 Wimpole Street, London W1M 8AE, England

Subject Categories:

Medicine, General & Internal: Impact Factor 3.422 (2002)

? Luukkonen, T. (1990), Bibliometrics and evaluation of research performance. *Annals of Medicine*, **22** (3), 145-150.

Keywords: Bibliometrics, Research

? Adlercreutz, H. and Mazur, W. (1997), Phyto-oestrogens and Western diseases. *Annals of Medicine*, **29** (2), 95-120.

Abstract: Incidences of breast, colorectal and prostate cancer are high in the Western world compared to countries in Asia. We have postulated that the Western diet compared to the semivegetarian diet in some Asian countries may alter hormone production, metabolism or action at the cellular level by some biochemical mechanisms. Out interest has been focused on two groups of hormone-like diphenolic phyto-oestrogens of dietary origin, the lignans and isoflavonoids abundant in plasma of subjects living in areas with low cancer incidence. The precursors of the biologically active compounds detected in man are found in soybean products, whole-grain cereal food, seeds, and berries. The plant lignan and isoflavonoid glycosides are converted by intestinal bacteria to hormone-like compounds. The weakly oestrogenic diphenols formed influence sex-hormone production, metabolism and biological activity, intracellular enzymes, protein synthesis, growth factor action, malignant cell proliferation, differentiation, cell adhesion and angiogenesis in such a way as to make them strong candidates for a role as natural cancer-protective compounds. Their effect on some of the most important steroid biosynthetic enzymes may result in beneficial modulation of hormone concentrations and action in the cells preventing development of cancer. Owing to their oestrogenic activity they reduce hot flushes and vaginal dryness in postmenopausal women and may to some degree inhibit osteoporosis, but alone they may be insufficient for complete protection. Soy intake prevents oxidation of the low-density lipoproteins in vitro when isolated from soy-treated individuals and affect favourably plasma lipid concentrations. Animal experiments provide evidence suggesting that both lignans and isoflavonoids may prevent the development of cancer as well as atherosclerosis. However, in some of these experiments it has not been possible to separate the phytooestrogen effect from the effect of other components in the food. The isoflavonoids and lignans may play a significant inhibitory role in cancer development particularly in the promotional phase of the disease, but recent evidence points also to a role in the initiation stage of carcinogenesis. At present, however, no definite recommendations can be made as to the dietary amounts needed for prevention of disease. This review deals with all the above-mentioned aspects of phyto-oestrogens.

Keywords: Cancer, Coronary Heart Disease, Epidemiology, Isoflavone, Lignan, Menopause, Tyrosine-Kinase Inhibitors, Hormone-Binding Globulin, Vascular Smooth-Muscle, Breast-Cancer Cells, Chromatography Mass-Spectrometry, Benign Prostatic Hyperplasia, Community-Based Population, Consuming Flaxseed Powder, Epidermal Growth-Factor, Post-Menopausal Women

# Title: Annals of the Missouri Botanical Garden

(Ann. MO. Bot. Gard.)

? Gastony, G.J. (1990), Electrophoretic evidence for allotetraploidy with segregating heterozygosity in South-African Pellaea-Rufa Tryon, AF. (adiantaceae). *Annals of the Missouri Botanical Garden*, **77** (2), 306-313.

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# Title: Annals of the New York Academy of Sciences

Full Journal Title: [Annals of the New York Academy of Sciences](http://www.annalsnyas.org/); [Annals of the New York Academy of Sciences](http://www3.interscience.wiley.com/journal/122401764/grouphome/home.html)

ISO Abbreviated Title: Ann. NY Acad. Sci.

JCR Abbreviated Title: Ann NY Acad Sci

ISSN: 0077-8923

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: New York Acad Sciences

Publisher Address: 2 E 63rd St, New York, NY 10021

Subject Categories:

Multidisciplinary Sciences: Impact Factor

Notes: highly cited

? Thomas, H.C. (1948), Chromatography: A problem in kinetics. *Annals of the New York Academy of Sciences*, **49** (2), 161-182.

Full Text: [-1959\Ann New Yor Aca Sci49, 161.pdf](-1959/Ann%20New%20Yor%20Aca%20Sci49,%20161.pdf)

Notes: highly cited 22931 times 01/01/2010

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Full Text: [-1959\Ann New Yor Aca Sci51, 660.pdf](-1959/Ann%20New%20Yor%20Aca%20Sci51,%20660.pdf)

? Berg, J.W. and Burbank, F. (1972), Correlations between carcinogenic trace metals in water supplies and cancer mortality. *Annals of the New York Academy of Sciences*, **199**, 249-264.

Full Text: [1960-80\Ann New Yor Aca Sci199, 249.pdf](1960-80/Ann%20New%20Yor%20Aca%20Sci199,%20249.pdf)

? Overstreet, R.M. and Howse, H.D. (1978), Some parasites and diseases of estuarine fishes in polluted habitats of Mississippi. *Annals of the New York Academy of Sciences*, **298**, 427-462.

Full Text: [1960-80\Ann New Yor Aca Sci298, 427.pdf](1960-80/Ann%20New%20Yor%20Aca%20Sci298,%20427.pdf)

? Komar, N. and Spielman, A. (1994), Emergence of eastern encephalitis in Massachusetts. *Annals of the New York Academy of Sciences*, **740**, 157-168.

Full Text: [1994\Ann New Yor Aca Sci740, 157.pdf](1994/Ann%20New%20Yor%20Aca%20Sci740,%20157.pdf)

Abstract: The 20th century emergence in Massachusetts of zoonotic eastern encephalitis was interpreted in terms of recorded environmental change. The main mosquito vector of the infection, Cs. melanura, appears to have been scarce in eastern North America before the 1930s. Its relative scarcity resulted from destruction of the swamps that had been lumbered or drained for farming in the 18th and 19th centuries. When swamps matured once again early in the 1900s, the formation of subsurface pools of water beneath mature trees would have increased the availability of breeding sites for this mosquito. Transmission would have further been enhanced by the simultaneous proliferation of wetland-roosting robins and the extinction of such vagile birds as the passenger pigeon. Although numerous horses were maintained in Massachusetts at the time, no outbreaks of “equine sleeping sickness” came to public notice between the 1830s and the 1930s, when mature trees were scarce and the fauna was most disturbed. The severity of the first major outbreak in 1938 may have been potentiated by the absence of herd-immunity in a rapidly proliferating population of reservoir birds. These considerations suggest that recent landscape and faunal changes caused zoonotic EE to emerge in Massachusetts after waning for a century.

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Full Text: [1997\Ann New Yor Aca Sci834, 357.pdf](1997/Ann%20New%20Yor%20Aca%20Sci834,%20357.pdf)

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Full Text: [1997\Ann New Yor Aca Sci837, 189.pdf](1997/Ann%20New%20Yor%20Aca%20Sci837,%20189.pdf)

Abstract: Four groups, each of 50 male and 50 female Sprague-Dawley rats, of the colony used in the Cancer Research Center of Bentivoglio of the Ramazzini Foundation, 12 weeks old at the start of the study, received drinking water containing sodium hypochlorite, resulting in concentrations of active chlorine of 750, 500, and 100 mg/l (treated groups), and tap water (active chlorine < 0.2 mg/l) (control group), respectively, for 104 weeks. Among the female rats of the treated groups, an increased incidence of lymphomas and leukemias has been observed, although this is not clearly dose related. Moreover, sporadic cases of some tumors, the occurrence of which is extremely unusual among the untreated rats of the colony used (historical controls), were detected in chlorine-exposed animals. The results of this study confirm the results of the experiment of the United States National Toxicology Program, (1991), which showed an increase of leukemia among female Fischer 344/N rats following the administration of chlorine (in the form of sodium hypochlorite and chloramine) in their drinking water. The data here presented call for further research aimed at quantifying the oncogenic risks related to the chlorination of drinking water, to be used as a basis for consequent public health measures.

# Title: Annals of Nuclear Energy

Full Journal Title: Annals of Nuclear Energy

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Rahmati, A., Ghaemi, A. and Samadfam, M. (2012), Kinetic and thermodynamic studies of uranium(VI) adsorption using Amberlite IRA-910 resin. *Annals of Nuclear Energy*, **39** (1), 42-48.

Full Text: [2012\Ann Nuc Ene39, 42.pdf](2012/Ann%20Nuc%20Ene39,%2042.pdf)

Abstract: Thermodynamic and kinetic studies have been carried out on the adsorption of uranium(VI) by Amberlite IRA-910 resin. The adsorption process has been investigated as a function of adsorbate concentration, solution acidity, contact time, adsorbent dosage, and temperature. The experiments were preformed in batch mode, where uranium initial concentration on the solution samples were 185.5, 277.6 and 456.8 (mg/lit), sulfuric acid concentration range was 0.02-9 (mol/lit) and sorbent dosages were 0.2, 0.3 and 0.5 g. Equilibrium isotherm data were analyzed using Freundlich and Dubinin-Radushkevich isotherm models. The results showed that the adsorption process was well described by Freundlich isotherm model. The kinetic data were analyzed using first-order and pseudo-second order kinetic models. The results indicated that adsorption fitted well with the pseudo-second order kinetic model. The thermodynamic parameters were determined at six (15, 30, 45, 45, 60 and 75°C) different temperatures by plotting InK(L) versus 1/T. The Δ*H*° and Δ*G*° values of uranium(VI) adsorption on Amberlite IRA-910 show endothermic heat of adsorption; higher temperatures favor the process. (C) 2011 Elsevier Ltd. All rights reserved.

Keywords: Adsorbent, Adsorption, Amberlite 910 Resin, Chelating Resin, Dubinin-Radushkevich, Equilibrium, Freundlich, Ions, Ir-118h Resin, Isotherm, Isotherm Models, Isotherms, Kinetic, Phenyl Phosphoric-Acid, Preconcentration, Selective Extraction, Separation, Solvent-Extraction, Sorption Behavior, Thermodynamic, U(VI), Uranium

# Title: Annals of Nuclear Medicine

Full Journal Title: Annals of Nuclear Medicine

ISO Abbreviated Title:

JCR Abbreviated Title: Ann Nucl Med

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Rahman, M., Sakamoto, J. and Fukui, T. (2002), Japan’s contribution to nuclear medical research. *Annals of Nuclear Medicine*, **16** (6), 383-385.

Full Text: [2002\Ann Nuc Med16, 383.pdf](2002/Ann%20Nuc%20Med16,%20383.pdf)

Abstract: We investigated the degree of Japan’s contribution to the nuclear medical research in the last decade. Articles published in 1991-2000 in highly reputed nuclear medical journals were accessed through the MEDLINE database. The number of articles having affiliation with a Japanese institution was counted along with publication year. In addition, shares of top-ranking countries were determined along with their trends over time. of the total number of articles (7,788), Japan’s share of articles in selected nuclear medical journals was 11.4% (889 articles) and ranked 2nd in the world after the USA (2,645 articles). The recent increase in the share was statistically significant for Japan (p = 0.02, test for trend). Japan’s share in nuclear medical research output is much higher than that in other biomedical fields.

# Title: Annals of Occupational Hygiene

Full Journal Title: [Annals of Occupational Hygiene](http://annhyg.oxfordjournals.org/archive/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ogden, T. (2006), *Annals of occupational Hygiene* at volume 50: Many achievements, a few mistakes, and an interesting future. *Annals of Occupational Hygiene*, **50** (8), 751-764.

Full Text: [2006\Ann Occ Hyg50, 751.pdf](2006/Ann%20Occ%20Hyg50,%20751.pdf)

Abstract: The past 10 years have seen a doubling of the number of papers submitted to the Annals, and a 5-fold increase in the number of institutions with access to the journal. Electronic access is now far more important than print access. Papers from British authors dominated the first 20 years of the journal, but the rest of Europe is now more important, with Scandinavia and The Netherlands being the major continental sources. North America is the other major source. For British papers, there has been a big growth in government authors, and a decline in papers from industry and armed forces. From many possible topics, trends are selectively reviewed in: standards and exposure limits; measurement methods and criteria; sampling strategy and statistics; fibres; control banding; dermal exposure; and evaluation of control. For the future, we will continue to have the same aims and standards, but the changes of the past few years, and the growth of new approaches such as open access, have emphasized the difficulty of forecasting. The growth in submissions from countries which we presently regard as ‘developing’, and especially the growth in higher education in China, and the amount of occupational disease there, are bound to have major impacts. Perhaps the English language will not continue to dominate scientific publishing, but in any case an eastward shift in the source of papers must lead to other changes.

Keywords: Access, Changes, China, Control, Criteria, Developing, Education, Europe, Evaluation, Exposure, First, Forecasting, Growth, Higher Education, Impacts, Institutions, Journal, Lead, Measurement, Methods, New Approaches, North, Occupational, Occupational Disease, Open, Open Access, Papers, Publishing, Sampling, Source, Sources, Standards, Statistics, The Netherlands, Trends, Volume

# Title: Annals of Oncology

Full Journal Title: [Annals of Oncology](http://annonc.oupjournals.org/)

ISO Abbreviated Title: Ann. Oncol.

JCR Abbreviated Title: Ann Oncol

ISSN: 0923-7534

Issues/Year: 12

Journal Country/Territory: England

Language: English

Publisher: Oxford Univ Press

Publisher Address: Great Clarendon St, Oxford OX2 6DP, England

Subject Categories:

Oncology: Impact Factor 0.3114, / (2002)

Berghmans, T., Meert, A.P., Mascaux, C., Paesmans, M., Lafitte, J.J. and Sculier, J.P. (2003), Citation indexes do not reflect methodological quality in lung cancer randomised trials. *Annals of Oncology*, **14** (5), 715-721.

Full Text: [2003\Ann Onc14, 715.pdf](2003/Ann%20Onc14,%20715.pdf)

Abstract: Background: Citation factors are applied to assess scientific work despite the fact that they were developed commercially in order to compare competing journals. The aim of the present study was to determine whether there is a relationship between citation factors and a trial’s methodological quality using published randomised trials in lung cancer clinical research.

Material and methods: All of the randomised trials included in nine systematic reviews performed by the European Lung Cancer Working Party (ELCWP) were assessed using two quality scales (Chalmers and ELCWP).

Results: One hundred and eighty-one articles were eligible. The median overall ELCWP and Chalmers quality scores were 61.8% and 49.0%, respectively, with a correlation coefficient (r(s)) of 0.74 (P <0.001). A weak association was observed between citation factors and quality scores with the respective correlation coefficients ranging from 0.18 to 0.40 (ELCWP scale) and from 0.21 to 0.38 (Chalmers scale). American authors published trials significantly more often in journals with high citation factors than European or non-American authors (P <0.0001), despite no better methodological quality. Positive trials, which were significantly more likely to be published in journals with higher citation factors, were of no better quality than negative ones.

Conclusion: Journals with higher citation factors do not appear to publish clinical trials with higher levels of methodological quality, at least for trials in the field of lung cancer research.

Keywords: Bibliometry, Citation Factor, Eurofactor, Impact Factor, Lung Cancer, Prestige Factor, Impact Factors, Metaanalysis, Chemotherapy

? Van den Wyngaert, T., Huizing, M.T. and Vermorken, J.B. (2006), Bisphosphonates and osteonecrosis of the jaw: Cause and effect or a *post hoc* fallacy? *Annals of Oncology*, **17** (8), 1197-1204.

Full Text: [2006\Ann Onc17, 1197.pdf](2006/Ann%20Onc17,%201197.pdf)

Abstract: Background: An increasing amount of reports are being published suggesting a relationship between the use of bisphosphonates (BPs) and the development of osteonecrosis of the jaw (ONJ). We reviewed the currently available evidence and explore the potential mechanisms of action based on the known effects of the concerned BP. Design: The MEDLine, Current Contents and Science Citation Index Expanded databases were queried and the results augmented by analyzing cited references and recent congress proceedings. Results: 22 papers were included detailing 225 patients, all based on retrospective chart review without control groups. The prevalence of ONJ was estimated at 1.5%. The involved BPs were pamidronate, zoledronic acid, alendronate and risedronate, all potent nitrogen-containing agents. The most common symptom was pain (81.7%), although 12.2% of cases were asymptomatic. In 69.3% of patients ONJ was preceded by a dental extraction. At the time of diagnosis, 74.5% of patients were receiving chemotherapy and in 38.2% of cases corticosteroids were administered. Although various conservative and surgical treatment modalities were reported, residual sites of ONJ persisted in 72.5% of cases. Conclusion: Although not enough evidence is available to prove a causal link, it seems that under specific circumstances local defenses can become overwhelmed resulting in ONJ.

Keywords: Alendronate, American-Society, Association, Avascular Bone Necrosis, Bisphosphonates, Cancer-Chemotherapy, Citation, Complication, Databases, Design, Development, Diagnosis, Groups, Jaw, Local, Long-Term Survivors, Mechanisms, Metastatic Cancer, Multiple-Myeloma, Osteonecrosis, Pain, Prevalence, Review, Science, Science Citation Index, Treatment, Zoledronic Acid

? Saad, D., Mangabeira, A., Masson, A.L. and Prisco, F.E. (2010), The geography of clinical cancer research: Analysis of abstracts presented at the American Society of Clinical Oncology Annual Meetings. *Annals of Oncology*, **21** (3), 627-632.

Full Text: [2010\Ann Onc21, 627.pdf](2010/Ann%20Onc21,%20627.pdf)

Abstract: Background: The American Society of Clinical Oncology Annual Meeting is the largest forum for presentation of clinical research in oncology. We quantified the contribution of countries and assessed correlates of their presence at such meetings. Methods: After stratifying abstracts according to category of presentation (oral, poster, and ‘publication only’), we took a random sample of 10% of the studies presented at years 2001-2003 and 2006-2008. We assigned abstract nationality using the affiliation of authors. For multinational studies, we developed an algorithm to assign nationality. Results: of the 22 045 eligible abstracts, 2206 were analyzed and represented 71 countries: 905 (41%) abstracts were from a single institution, 969 (44%) were multicenter, uninational studies, and 332 (15%) were multinational studies. United States nationality was assigned to 49% of all abstracts and the next 14 countries with a higher number of studies accounted for 41%. There was a statistically significant temporal trend in the proportion of multinational studies. Also, multinational studies and abstracts with United States nationality were more frequently presented in oral and poster fashion and had more frequent involvement of the pharmaceutical industry. Conclusion: This study provides a geographic overview of clinical cancer research and indicates that multinational collaboration is increasing.

Keywords: Abstract, Authors, Bibliometrics, Cancer, Collaboration, Conflicts-Of-Interest, Contribution, Drug Industry, European-Union, Fate, Geography, Meeting Abstracts, Neoplasms, Oncology, Pharmaceutical, Pharmaceutical Industry, Publication, Publication Rate, Randomized-Trials, Research, Scientific Societies, United States

? Islami, F., Sheikhattari, P., Ren, J.S. and Kamangar, F. (2011), Gastric atrophy and risk of oesophageal cancer and gastric cardia adenocarcinoma: A systematic review and meta-analysis. *Annals of Oncology*, **22** (4), 754-760.

Full Text: [2011\Ann Onc22, 754.pdf](2011/Ann%20Onc22,%20754.pdf)

Abstract: Background: Several studies have reported an association between gastric atrophy and upper gastrointestinal cancers. Our aim was to summarise the available information and calculate the relative risks (RRs) associated with gastric atrophy for gastric cardia adenocarcinoma (GCA), oesophageal squamous cell carcinoma (OSCC), and oesophageal adenocarcinoma (OAC) by conducting a systematic review and meta-analysis. Methods: We searched the PUBMED and ISI-Web of Science databases, as well as the reference lists of the relevant articles. Summary RRs and 95% confidence intervals (95% CI) were calculated using random-effects models for the association between gastric atrophy, defined histologically or by serum pepsinogen markers, and OSCC, OAC, and GCA. Results: Eighteen articles were included in the meta-analysis; 13, 7, and 3 studies reported on GCA, OSCC, and OAC, respectively. The overall RRs (95% CI) for the three cancer types were: GCA, 2.89 (2.09-3.98); OSCC, 1.94 (1.48-2.55); OAC, 0.51 (0.19-1.37). Several subgroup analyses showed the robustness of the results. In the majority of the analyses, there was low to moderate heterogeneity. Conclusions: This study found two-to threefold increased risk of OSCC and GCA but a possible reduced risk of OAC in people with gastric atrophy. Further studies are needed to establish the association with OAC and causal association with OSCC, and mechanisms of the increased risk need to be investigated for GCA.

Keywords: 2 Distinct Etiologies, 5 Continents, Antibodies, Cancer, Carcinoma, Cardia Adenocarcinoma, Cohort, Confidence Intervals, Databases, Gastric Atrophy, Gastric Cancer, Gastrointestinal, General-Population, Helicobacter-Pylori Infection, Information, Meta-Analysis, Methods, Oesophageal Cancer, Pepsinogen, Predictor, PUBMED, Review, Risk, Robustness, Science, Serum Pepsinogen-I, Squamous-Cell Carcinoma, Stomach-Cancer, Systematic, Systematic Review

? Balagula, Y., Wu, S., Su, X. and Lacouture, M.E. (2011), The effect of cytotoxic chemotherapy on the risk of high-grade acneiform rash to cetuximab in cancer patients: A meta-analysis. *Annals of Oncology*, **22** (11), 2366-2374.

Full Text: [2011\Ann Onc22, 2366.pdf](2011/Ann%20Onc22,%202366.pdf)

Abstract: Background: The effect of chemotherapy on the risk of cetuximab-induced acneiform rash is unknown. We carried out a systematic review and meta-analysis of published studies to quantify the incidence and risk of high-grade acneiform rash with combination therapy. Methods: Relevant studies were identified from PubMed database, abstracts presented at the American Society of Clinical Oncology conferences, and Web of Science. Incidence of acneiform rash to cetuximab monotherapy was estimated based on updated data from our previously published meta-analysis. Incidence, relative risk (RR), and 95% confidence intervals (CIs) were calculated based on the heterogeneity of included studies. Results: A total of 5333 patients from nine trials were included in the analysis. The incidence of high-grade acneiform rash was significantly increased in patients receiving combination treatment (12.8%, 95% CI 9.1% to 17.7%) as compared with cetuximab monotherapy (6.3%, 95% CI 3.7% to 10.5%), with a risk ratio of 2.03 (95% CI 1.52-2.71, P < 0.01). Cetuximab significantly increased the risk of high-grade rash in patients receiving combination therapy (RR = 37.7, 95% CI 17.8-80.0, P < 0.001). Conclusions: Addition of cytotoxic chemotherapy to cetuximab significantly increases the risk of high-grade acneiform rash compared with cetuximab monotherapy. This emphasizes the need for effective management strategies.

Keywords: 1st-Line Treatment, Acneiform Rash, Analysis, Cancer, Cell Lung-Cancer, Cetuximab, Chemotherapy, Combination Therapy, Confidence Intervals, Cutaneous Toxicities, Cytotoxic Chemotherapy, Growth-Factor Receptor, Incidence, Management, Meta Analysis, Meta-Analysis, Metastatic Colorectal-Cancer, Methods, Monoclonal-Antibody, Monotherapy, Oncology, Open-Label, Papulopustular Rash, Patients, Phase-II Trial, Plus Irinotecan, Pubmed, Ratio, Relative Risk, Review, Risk, Science, Skin Rash, Systematic, Systematic Review, Therapy, Treatment, Web of Science

# Title: Annals of Otology Rhinology and Laryngology

Full Journal Title: [Annals of Otology Rhinology and Laryngology](http://weblinks1.epnet.com/authHjafDetail.asp?tb=1&_ua=bo+B%5F+db+pbhjnh+bt+ID++1FP+6975&_ug=sid+48D460C8%2D1428%2D48BE%2DA9A7%2DEB38CEE405DC%40sessionmgr2+dbs+pbh+A622&_us=hd+True+sm+ES+4DBA&_uso=st%5B0+%2DID++1FP+tg%5B0+%2D+db%5B0+%2Dpbh+op%5B0+)

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? Iro, H., Zenk, J., Waldfahrer, F., Benzel, W., Schneider, T. and Ell, C. (1998), Extracorporeal shock wave lithotripsy of parotid stones - Results of a prospective clinical trial. *Annals of Otology Rhinology and Laryngology*, **107** (10), 860-864.

Full Text: Ann Oto Rh Lar107, 860

Abstract: The extracorporeal shock wave treatment of parotid stones is a rather new therapy. Its usefulness was determined in a prospective study. Seventy-six patients (36 female, 40 male, 2 to 80 years of age) with symptomatic, sonographically detectable solitary sialoliths of the parotid gland were treated with an extracorporeal pieaoelectric shock wave therapy after unsuccessful conservative therapy (sialagogues, gland massage, bougienage of the secretory duct). At most, 3 treatments per patient were performed. Altogether, 38 of the 76 patients (50%) were free of stones and no longer suffered from complaints after completion of shock wave treatment and a mean follow-up period of 48 months (range 6 to 71 months). During the follow-up period, in no case could renewed stone formation be observed. Residual stone fragments were detectable in 20 patients (26%), but did not cause further symptoms. Thirteen patients (17%) with residual stone fragments stated a significant improvement of their complaints after therapy. Five patients (7%) did not observe any changes of their pretherapeutic complaints and underwent parotidectomy. The therapeutic success was not influenced by stone size or by stone localization within the gland. During the follow-up period, no side effects of the therapy were identified. With stones of the parotid gland, extracorporeal shock wave lithotripsy is - after one has used conservative therapies (sialagogues, gland massage) - the treatment of choice, avoiding in the majority of cases a parotidectomy with its operative risks (paresis of the facial nerve, Frey’s syndrome).

Keywords: Lithotripsy, Salivary Glands, Shock Waves, Sialolithiasis, Salivary-Gland Stones, Duct Stones, Sialolithiasis

Zenk, J., Bozzato, A., Gottwald, F., Winter, M. and Iro, H. (2004), Extracorporeal shock wave lithotripsy of submandibular stones: Evaluation after 10 years. *Annals of Otology Rhinology and Laryngology*, **113** (5), 378-383.

Full Text: [2004\Ann Oto Rh Lar113, 378.pdf](2004/Ann%20Oto%20Rh%20Lar113,%20378.pdf)

Abstract: The use of extracorporeal shock waves in the treatment of submandibular stones is a minimally invasive approach for the treatment of this disease. Its clinical significance has been determined in a long-term retrospective study, performed as follow-up to the short-term results. From 1989 to 1994, 197 patients (88 female, 109 male; age range, 8 to 83 years) with symptomatic, sonographically detectable concretions of the submandibular gland were treated with extracorporeal shock wave lithotripsy. The review analysis was completed retrospectively in 2002 and included 191 patients with complete data. The period under review ranged from 8 to 13 years, with an average of 10.5 years. Altogether, 67 of the 191 patients (35%) either were free of stones or had no more symptoms from the residual sialoliths. Another 15% had a significant improvement in their symptoms and required no further therapy. The remaining 95 patients (50%) had residual stones; they had no symptoms in the short review period, but have had symptoms since. The therapeutic success was not influenced by the stone size, but rather by the stone location within the gland. After therapy, no severe side effects were identified. Extracorporeal shock wave lithotripsy is a possible treatment for stones in the submandibular gland. In combination with other gland-preserving methods, it now forms part of a multi therapeutic approach that renders submandibulectomy unnecessary in the majority of cases.

Keywords: Lithotripsy, Salivary Gland, Shock Wave, Sialolithiasis, Ultrasonography, Salivary-Gland Stones, Duct Stones, Sialolithiasis, Calculi

# Title: Annals of Pharmacotherapy

Full Journal Title: [Annals of Pharmacotherapy](http://www.theannals.com/contents-by-date.0.shtml)

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? Neihouse, P.F. and Priske, S.C. (1989), Quotation accuracy in review articles. *Annals of Pharmacotherapy*, **23** (7-8), 594-596.

Full Text: Ann Pha23, 594.pdf

Abstract: The purpose of this study was to determine the accuracy of referenced statements in review articles focused on drug therapy. Review articles published between January and December 1987 in Clinical Pharmacy, DICP, Drugs, and Pharmacotherapy were used. Ninety-nine references from these articles were randomly selected and pulled to determine if the published study results were in agreement with the review article statement. These references accounted for 165 statements. Thirty-nine of 165 statements in the review articles (24 percent) were found to be inappropriate when compared with the original references. These inappropriate quotations were classified as either wrong, misleading, or deriving from only the discussion section of the original article. There is a need for increased awareness by authors to differentiate between reported results, article hypothesis, and their own interpretations, as well as for accuracy in quotation.

? Hatton, R.C. (2000), Bismuth subgallate-epinephrine paste in adenotonsillectomies. *Annals of Pharmacotherapy*, **34** (4), 522-525.

Full Text: Ann Pha34, 522.pdf

Abstract: OBJECTIVE: To evaluate the role of bismuth subgallate-epinephrine (BSE) paste as a hemostatic in adenotonsillectomies. DATA SOURCES: MEDLINE (January 1966-October 1999) and Current Contents (January 1997-October 1999) were searched, using bismuth subgallate, adenoidectomy, tonsillectomy, and adenotonsillectomy as search terms. A citation search was performed using Science Citation Index (January 1977-October 1999). DATA SYNTHESIS: Adenotonsillectomies are common procedures; although there are few complications, hemorrhage is a concern. Bismuth subgallate has historically been used as an astringent and hemostatic. An evaluation of studies of bismuth subgallate and BSE paste was conducted. CONCLUSIONS: There is minimal evidence to support this practice, but data suggest that epinephrine may be the active ingredient in BSE paste. BSE paste is inexpensive, poses little risk, and may decrease postoperative bleeding; therefore, it may be a reasonable hemostatic agent.

Keywords: Adenoidectomy, Adenotonsillectomies, Bismuth Subgallate-Epinephrine, Citation, Evaluation, Medline, Science Citation Index, Support, Tonsillectomy

? Chang, Z.G., Kennedy, D.T., Holdford, D.A. and Small, R.E. (2000), Pharmacists’ knowledge and attitudes toward herbal medicine. *Annals of Pharmacotherapy*, **34** (6), 710-715.

Full Text: 2000\Ann Pha34, 710.pdf

Abstract: OBJECTIVE: The use and sales of herbal medications have increased dramatically over the past several years. Pharmacists are in an ideal position to educate patients about herbal medicines. This study was intended to determine the knowledge and attitudes of pharmacists regarding herbal medications.

METHODS: A survey was distributed to pharmacists at several state and regional meetings in Virginia and North Carolina between August and October 1998. The survey evaluated demographic data, attitudinal scales, and a 15-item herbal medicine knowledge test. Pharmacists immediately returned the surveys to the distributor on completion.

RESULTS: of the 217 surveys distributed, 164 met the inclusion criteria for further evaluation. of the pharmacists surveyed, 68.0% practiced in a community pharmacy, 45.1% had previous continuing education on herbal medications, and 73.6% sold herbal medications in their practice settings. The average score on the herbal knowledge test was 6.3 (maximum score of 15). Pharmacists with previous continuing education scored significantly higher than those without prior continuing education (p < 0.001). of the 15 questions, the five that pharmacists were most likely to answer correctly assessed the uses of herbal medications. Additionally, pharmacists with prior continuing education or with access to herbal medication information at their practice site were more likely to agree that providing information about herbal medication is a pharmacist’s professional responsibility (p = 0.02 and p = 0.01, respectively).

CONCLUSIONS: The findings from this study demonstrate that pharmacists were more likely to answer correctly about the uses of herbal medications than about drug interactions, adverse drug effects, and precautions of herbal medications. Additionally, pharmacists with previous continuing education on herbal medications were more knowledgeable about these products. With the increasing use of herbal medications, there is a greater need for pharmacy training programs in this area.

Keywords: Herbal Medicine, Alternative Medicine, Alternative Medicine, United-States, HIV-Infection, Ginseng

? Levien, T.L., Baker, D.E., Campbell, R.K. and White, J.R. (2001), Nateglinide therapy for type 2 diabetes mellitus. *Annals of Pharmacotherapy*, **35** (11), 1426-1434.

Abstract: Objective: To review the pharmocology, pharmacokinetics, dosing guidelines, adverse effects, drug interactions, and clinical efficacy of nateglinide. Data Source: Primary and review articles regarding nateglinide were identified by MEDLINE search (from 1966 to January 2001); abstracts were identified through the Institute for Scientific Information Web of Science (from 1995 to January 2001) and the American Diabetes Association; additional information was obtained from the nateglinide product information. Study Selection/Data Extraction: All articles and meeting abstracts identified from the data source were evaluated and all information deemed relevant was included in this review. Much of the information was from abstracts or the product labeling, since few clinical studies have been published in the medical literature. Data Synthesis: Nateglinide is a novel nonsulfonylurea oral antidiabetic agent that stimulates insulin secretion from the pancreas. It has a rapid onset and short duration of action, allowing administration before a meal to reduce postprandial hyperglycemia. Improvement in glycemic control with nateglinide monotherapy has been demonstrated in patients not previously treated with antidiabetic medications. Greater improvement in glycemic control was observed when nateglinide was administered in combination with metformin. Conclusions: Nateglinide is similar to repaglinide, but has a quicker onset of action, quicker reversal, and does not usually require dosage titration. Based on the pharmacodynamics of nateglinide and repaglinide, nateglinide produces a more rapid postprandial increase in insulin secretion, and its duration of response is shorter than that of repaglinide. The risk of postabsorptive hypoglycemia should be lower than with either sulfonylureas or repaglinide.

Keywords: Adverse Effects, Agent Nateglinide, Cardiovascular-Disease, Control, Diabetes, Diabetes Mellitus, Drug, Drug Interactions, Efficacy, Extraction, Glucose, Guidelines, Hyperglycemia, Hypoglycemia, Information, Insulin, Insulin-Secretion, Literature, Medical, Medline, Metformin, Monotherapy, Nateglinide, Primary, Review, Risk, Science, Scientific Information, Starlix, Therapy, Type 2, Type 2 Diabetes, Type 2 Diabetes Mellitus, Web of Science

?? evien, T.L., Baker, D.E., White, J.R. and Campbell, R.K. (2002), Insulin glargine: A new basal insulin. *Annals of Pharmacotherapy*, **36** (6), 1019-1027.

Abstract: Objective: To review the pharmacology, pharmacokinetics, dosing guidelines, adverse effects, drug interactions, and clinical efficacy of insulin glargine. Data Sources: Primary and review articles regarding insulin glargine were identified by MEDLINE search (1966-July 2001); abstracts were identified through Institute for Scientific Information Web of Science (1995-July 2001) and the American Diabetes Association. Additional information was obtained from the insulin glargine product information. Study Selection and Data Extraction: All of the articles and meeting abstracts identified from the data sources were evaluated, and all information deemed relevant was included in this review. Priority was placed on data from the primary medical literature. Data Synthesis: Insulin glargine is a long-acting, recombinant human insulin analog that is given once daily as a basal source of insulin in patients with type 1 or type 2 diabetes mellitus. Modification of the basic insulin structure has produced a new insulin that is soluble at an acidic pH, but precipitates in the subcutaneous tissue and is slowly released from a depot. Insulin glargine has a slower onset of action than NPH insulin and a longer duration of action with no peak activity. Once-daily administration of insulin glargine has comparable efficacy to that of NPH insulin administered once or twice daily in basal-bolus regimens when used in combination with intermittent doses of regular insulin or insulin lispro in patients with type 1 and type 2 diabetes, and in conjunction with oral antidiabetic agents in patients with type 2 diabetes. Overall, insulin glargine has an incidence of hypoglycemia comparable to or less than that of NPH insulin, with a reduced incidence of nocturnal hypoglycemia compared with NPH insulin seen in some studies. Conclusions: Insulin glargine is a long-acting insulin analog capable of providing 24-hour basal insulin coverage when administered once daily at bedtime. Its activity profile, which lacks a pronounced peak, more closely resembles that of endogenous basal insulin than that of other intermediate- or long-acting insulins and appears more likely to be associated with a reduced incidence of hypoglycemia, particularly nocturnal hypoglycemia. Insulin glargine physiologically provides basal insulin but, for most patients, the addition of a rapid-acting insulin, like insulin lispro, before or with meals will need to be included in the treatment regimen to achieve optimal management of blood glucose concentrations.

Keywords: Adverse Effects, Analog, Blood, Coverage, Diabetes, Diabetes Mellitus, Drug, Drug Interactions, Efficacy, Extraction, Guidelines, HOE-901, Human, Hypoglycemia, Information, Insulin, Insulin Glargine, Lantus, Lispro, Literature, Management, Medical, Medline, NPH Insulin, pH, Pharmacokinetics, Primary, Profile, Review, Science, Scientific Information, Sources, Subcutaneous Injection, Subcutaneous Tissue, Therapy, Treatment, Type 1, Type 2, Type 2 Diabetes, Type 2 Diabetes Mellitus, Web of Science

? Jenkins, J.K. and Boothby, L.A. (2002), Treatment of itching associated with intrahepatic cholestasis of pregnancy. *Annals of Pharmacotherapy*, **36** (9), 1462-1465.

Abstract: OBJECTIVE: To review the drug therapy for the treatment of itching associated with intrahepatic cholestasis of pregnancy (ICP). DATA SOURCES: A comprehensive literature search was conducted in MEDLINE (1966-July 2002) using the following MeSH terms: pregnancy, itching, intrahepatic cholestasis, cholestyramine, ursodeoxycholic acid, and phenobarbital. Current Contents (1966-July 2002), International Pharmaceutical Abstracts (1970-June 2002), and Cochrane Database were also searched using those terms. Web of Science search was used to search references found in articles. DATA SYNTHESIS: Eight clinical trials and several observational studies were identified evaluating the safety and efficacy of ursodeoxycholic acid (UDCA) in the treatment of ICP. Although these studies were small and inconsistent, improvement in maternal and fetal morbidity was demonstrated. Observational studies suggest that cholestyramine may be associated with improved maternal morbidity without a documented improvement in fetal outcome. Two observational studies evaluated the efficacy of phenobarbital for ICP treatment. Phenobarbital use was not associated with improved maternal or fetal morbidity/mortality. CONCLUSIONS: Data from large, well-designed, randomized, controlled trials of treatment of ICP are lacking. Data that are available support the use of UDCA as a first-line agent and cholestyramine as a second-line agent for treatment of ICP. There is little evidence to recommend phenobarbital in the treatment of itching associated with that condition.

Keywords: Bile-Acids, Cholestyramine, Cholestyramine, Clinical Trials, Cochrane, Controlled Trial, Drug, Efficacy, Intracranial Hemorrhage, Intrahepatic Cholestasis, Itching, Literature, Management, Medline, Morbidity, Observational Studies, Outcome, Pathogenesis, Phenobarbital, Pregnancy, Pruritus, Review, S-Adenosylmethionine, Safety, Science, Serum, Therapy, Treatment, Ursodeoxycholic Acid, Ursodeoxycholic Acid Therapy, Web of Science

? Schatz, R.A. (2003), Olanzapine for psychotic and behavioral disturbances in Alzheimer disease. *Annals of Pharmacotherapy*, **37** (9), 1321-1324.

Full Text: [2003\Ann Pha37, 1321.pdf](2003/Ann%20Pha37,%201321.pdf)

Abstract: OBJECTIVE: To evaluate the efficacy and safety of olanzapine for the treatment of psychotic and behavioral disturbances in Alzheimer disease. DATA SOURCES: MEDLINE (1966-January 2003) and Science Citation Index searches were performed. Key search terms included olanzapine, Alzheimer(s), and dementia. DATA SYNTHESIS: Four trials of olanzapine and subsequent post hoc analyses were reviewed. Three trials found a benefit associated with olanzapine use, but a fourth trial did not. CONCLUSIONS: Olanzapine appears to be effective in treating psychotic and behavioral disturbances associated with Alzheimer disease. However, the most appropriate dose remains to be determined. The benefit of olanzapine therapy must be weighed against the adverse effect profiles of olanzapine and alternative treatment options.

Keywords: Alzheimer Disease, Citation, Dementia, Dementia, Double-Blind, Medline, Nursing-Home Patients, Olanzapine, Placebo, Science, Science Citation Index, Symptoms, Therapy, Treatment, Trial

? Setter, S.M., Iltz, J.L., Fincham, J.E., Campbell, R.K. and Baker, D.E. (2005), Phosphodiesterase 5 inhibitors for erectile dysfunction. *Annals of Pharmacotherapy*, **39** (7-8), 1286-1295.

Abstract: OBJECTIVE: To review the pharmacologic and clinical trial data of the Food and Drug Administration-approved phosphodiesterase 5 (PDE5) inhibitors for the treatment of erectile dysfunction (ED). DATA SOURCES: Primary research and review articles were identified through a search of ScienceDirect, PUBMED/MEDLINE, and international Pharmaceutical Abstracts (1990-August 2004). The following search terms were used in the Medicine Dentistry and Pharmacology, Toxicology, and Pharmaceutical Sciences subcategories: phosphodiesterase 5 inhibitor, PDE5 inhibitor, erectile dysfunction, sildenafil, vardenafil, tadalafil, prostatectomy, and diabetes. Web of Science (1990-August 2004) was used to search for additional abstracts using the same search terms as above. The package inserts for sildenafil, vardenafil, and tadalafil were also consulted. STUDY SELECTION AND DATA EXTRACTION: All identified research, review articles, and abstracts were assessed for relevance, and all relevant information was included. Priority was given to the primary medical literature and clinical trial reports. DATA SYNTHESIS: ED is a common disorder in males with increased prevalence associated with age and presence of cardiovascular disease, prostatectomy, or diabetes mellitus. Sildenafil, vardenafil, and tadalafil are selective PDE5 Inhibitors currently available for treatment of ED. Their pharmacology and pharmacokinetics vary slightly, but with potentially important clinical differences in duration of activity; all have similar clinical efficacy and adverse effect profiles in patients with ED of various causes. CONCLUSIONS: Sildenafil, vardenafil, and tadalafil are safe and effective PDE5 inhibitors for the treatment of ED.

Keywords: Antihypertensive Drugs, Cardiovascular, Cardiovascular Disease, Cardiovascular-Disease, Clinical Trial, Controlled-Trial, Diabetes, Diabetes Mellitus, Disease, Disorder, Double-Blind, Efficacy, Erectile Dysfunction, Extraction, Information, Literature, Medical, Oral Sildenafil, Pharmacology, Phosphodiesterase Inhibitors : Sildenafil, Prevalence, Primary, Radical Prostatectomy, Research, Review, Science, Selection, Sexual Dysfunction, Sildenafil, Sildenafil Citrate, Tadalafil, Treatment, Treatment Satisfaction, Type-5 Inhibitor, Vardenafil, Web of Science

? Kirk, J.K., Bell, R.A., Bertoni, A.G., Arcury, T.A., Quandt, S.A., Goff, D.C. and Narayan, K.M.V. (2005), Ethnic disparities: Control of glycemia, blood pressure, and LDL cholesterol among US adults with type 2 diabetes. *Annals of Pharmacotherapy*, **39** (9), 1489-1501.

Abstract: OBJECTIVE: To examine ethnic disparities in the quality of diabetes care among adults with diabetes in the US through a systematic qualitative review. DATA SOURCES: Material published in the English language was searched from 1993 through June 2003 using PUBMED, Web of Science, Cumulative Index to Nursing and Allied Health, the Cochrane Library, Combined Health Information Database, and Education Resources Information Center. STUDY SELECTION AND DATA EXTRACTION: Studies of patients with diabetes in which at least 50% of study participants were ethnic minorities and studies that made ethnic group comparisons were eligible. Research on individuals having prediabetes, those < 18 years of age, or women with gestational diabetes were excluded. Reviewers used a reproducible search strategy. A standardized abstraction and grading of articles for publication source and content were used. Data on glycemia, blood pressure, and low-density lipoprotein cholesterol (LDL-C) were extracted in patients with diabetes. A total of 390 studies were reviewed, with 78 meeting inclusion criteria. DATA SYNTHESIS: Ethnic minorities had poorer outcomes of care than non-Hispanic whites. These disparities were most pronounced for glycemic control and least evident for LDL-C control. Most studies showed blood pressure to be poorly controlled among ethnic minorities. CONCLUSIONS: Control of risk factors for diabetes (glycemia, blood pressure, LDL-C) is challenging and requires routine assessment. These findings indicate that additional efforts are needed to promote diabetes quality of care among minority populations.

Keywords: Adults, Assessment, Blood, Blood Pressure, Cardiovascular-Disease, Cochrane, Control, Diabetes, Disease Risk-Factors, Disparities, Education, Ethnicity, Extraction, Gestational Diabetes, Glycemia, Health, Insulin-Resistance Syndrome, Intertribal Heart Project, Ldl, Managed-Care, Mexican-Americans, Minorities, Nursing, Outcomes, Pressure, Publication, PUBMED, Quality Improvement Project, Quality of Care, Quality-of-Care Measures, Racial-Differences, Randomized Controlled-Trial, Research, Review, Risk, Risk Factors, Science, Selection, Strategy, Systematic, Type 2, Type 2 Diabetes, Urban African-Americans, US, Web of Science, Women

? Levien, T.L. (2006), Phosphodiesterase inhibitors in Raynaud’s phenomenon. *Annals of Pharmacotherapy*, **40** (7-8), 1388-1393.

Abstract: OBJECTIVE: To evaluate the efficacy of the phosphodiesterase type 5 (PDE5) inhibitors in the treatment of Raynaud’s phenomenon. DATA SOURCES: Searches of MEDLINE (1966-March 2006) and Web of Science (1980-March 2006) were conducted; search terms were sildenafil, tadalafil, vardenafil, phosphodiesterase, and Raynaud. Studies and case reports published in English were retrieved. Additional references were identified in bibliographic reviews. DATA SYNTHESIS: Several small studies and a number of case reports have described the use of PDE5 inhibitors in patients with either primary or secondary Raynaud’s phenomenon. The data from the best designed study show a reduced attack frequency and duration, reduced Raynaud Condition Score, and increased capillary blood flow in patients with secondary Raynaud’s phenomenon. CONCLUSIONS: Available evidence suggests that sildenafil may be associated with improved microcirculation, symptomatic relief, and ulcer healing in patients with secondary Raynaud’s phenomenon. Limited information suggests similar effects with tadalafil and vardenafil. Improved blood flow and clinical improvements have also been observed in some patients with primary Raynaud’s phenomenon treated with PDE5 inhibitors; however, studies have yielded conflicting results.

Keywords: Bibliographic, Blood, Blood Flow, Blood-Flow, Case Reports, Efficacy, Frequency, Information, Ischemia, Medline, Patient, Primary, Raynaud’S Phenomenon, Science, Scleroderma, Secondary, Sildenafil, Sildenafil Citrate, Systemic-Sclerosis, Tadalafil, Tadalafil, Treatment, Vardenafil, Web of Science

? Hatton, R.C., Winterstein, A.G., McKelvey, R.P., Shuster, J. and Hendeles, L. (2007), Efficacy and safety of oral phenylephrine: Systematic review and meta-analysis. *Annals of Pharmacotherapy*, **41** (3), 381-390.

Abstract: BACKGROUND: Oral phenylephrine is used as a decongestant, yet there has been no previously published systematic review supporting its efficacy and safety. OBJECTIVE: To assess the efficacy and safety of oral phenylephrine as a nonprescription decongestant. METHODS: MEDLINE, the Cochrane Central Registry of Controlled Trials, EMBASE, International Pharmaceutical Abstracts, and the Federal Register were searched for English and non-English-language studies published through January 2007 that measured the effects of oral phenylephrine on nasal airway resistance (NAR) in patients with nasal congestion. The retrieved studies were supplemented with information from our personal files and by hand searches of the references in any of the studies. Additionally, a Web of Science Search was conducted using the Cited Reference function for all published clinical trials identified. Studies included I in the analysis were randomized, placebo-controlled trials; studies of combination products were excluded. Two investigators independently extracted data on NAR, self-reported decongestant effects, and cardiovascular effects (ie, heart rate, blood pressure) from each of the included studies. Meta-analyses were performed for NAR and cardiovascular effects using a random effects model. Subjective decongestant effects were summarized. RESULTS: Based on 8 unpublished studies that included 138 patients, phenylephrine 10 mg did not affect NAR more than placebo; the mean maximal difference in relative change from baseline between phenylephrine and placebo was 10.1% (95% Cl -3.8% to 23.9%). Eight unpublished studies on phenylephrine 25 mg showed a significant reduction of maximal NAR compared with placebo of 27.6% (95% Cl 17.5% to 37.7%). There was significant heterogeneity among the studies included in this analysis, which was partially attributable to different laboratories and methods used. Patient-reported decongestion was not consistently better for any phenylephrine dose compared with placebo, and NAR was a more sensitive measurement of efficacy. Phenylephrine showed no consistent effect on heart rate or blood pressure for doses of 25 mg or less. CONCLUSIONS: There is insufficient evidence that oral phenylephrine is effective for nonprescription use as a decongestant. The Food and Drug Administration should require additional studies to show the safety and efficacy of phenylephrine.

Keywords: Administration, Airway, Analysis, Blood, Blood Pressure, Cardiovascular, Clinical Trials, Cochrane, Efficacy, EMBASE, Heart Rate, Heterogeneity, Information, Measurement, Medline, Meta-Analysis, Model, Nasal Airway Resistance, Nasal Decongestants, Pharmacokinetics, Phenylephrine, Pressure, Resistance, Review, Safety, Science, Systematic, Systematic Review, Web of Science

? Stump, A.L., Kelley, K.W. and Wensel, T.M. (2007), Bazedoxifene: A third-generation selective estrogen receptor modulator for treatment of postmenopausal osteoporosis. *Annals of Pharmacotherapy*, **41** (5), 833-839.

Abstract: OBJECTIVE: To review clinical studies and other available literature regarding the development, pharmacology, toxicology, pharmacokinetics/pharmacodynamics, adverse effects, and place in therapy of bazedoxifene, a selective estrogen receptor modulator (SERM), currently in Phase III clinical trials for the treatment and prevention of postmenopausal osteoporosis. DATA SOURCES: A literature search was performed of PUBMED (1966-February 2007), International Pharmaceutical Abstracts (1970-February 2007), Web of Science (1975-February 2007), Biological Abstracts (1926-2007), and Google Scholar (2001-February 2007) databases, using the search terms bazedoxifene, TSE-424, Indole-33, WAY-140424, selective estrogen receptor modulator, and SERM. In addition, product information was requested from the manufacturer, and www.clinicaltrials.gov was searched for unpublished Phase III clinical trials in progress. STUDY SELECTION AND DATA EXTRACTION: Articles on Phase I and II trials were selected for review, as well as articles discussing preclinical development of bazedoxifene. At the time of writing, no articles on Phase III trials were available for review. Abstracts of unpublished data were reviewed, as was information provided by the manufacturer. DATA SYNTHESIS: Bazedoxifene is a third-generation SERM currently in Phase III clinical trials. It has been found to act as an agonist on skeletal tissue, with bone turnover reduced by 20-25% with doses of 20 or 40 mg daily. In addition, bazedoxifene has been found to be an antagonist on breast tissue and uterine tissue, demonstrating inhibition of breast tissue proliferation and decreased endometrial stimulation as the dose is increased. CONCLUSIONS: Current literature suggests that bazedoxifene will likely be safe and effective when used in the treatment of postmenopausal osteoporosis. Completion of Phase III clinical trials will more fully elucidate the safety and efficacy profile of bazedoxifene, as well as more clearly define its place in therapy.

Keywords: Acetate, Adverse Effects, Articles, Bazedoxifene, Bone, Clinical Trials, Databases, Development, Efficacy, Estrogen, Extraction, Google Scholar, Healthy, Information, Literature, Osteoporosis, Prevention, Profile, PUBMED, Review, Safety, Science, Selection, Selective Estrogen Receptor Modulator, Serm, Therapy, Treatment, Tse-424, Web of Science, Women, Women’S Health, Writing

? Thomsen, L.A., Winterstein, A.G., Sondergaard, B., Haugbolle, L.S. and Melander, A. (2007), Systematic review of the incidence and characteristics of preventable adverse drug events in ambulatory care. *Annals of Pharmacotherapy*, **41** (9), 1411-1426.

Abstract: OBJECTIVE: To estimate the incidence and describe characteristics of preventable adverse drug events (pADEs) in ambulatory care. DATA SOURCES: Studies were searched in PUBMED (1966-March 2007), International Pharmaceutical Abstracts (1970-December 2006), the Cochrane database of systematic reviews (1993-March 2007), EMBASE (1980-February 2007), and Web of Science (1945-March 2007). Key words included medication error, adverse drug reaction, iatrogenic disease, outpatient, ambulatory care, primary health care, general practice, patient admission, hospitalization, observational study, retrospective studies, health services research, and follow-up studies. Additional articles were found in the reference sections of retrieved articles. STUDY SELECTION AND DATA EXTRACTION: Peer-reviewed articles assessing pADEs in ambulatory care, with detailed descriptions/frequency distributions of (1) ADE/pADE incidence, (2) clinical outcomes, (3) associated drug groups, and/or (4) underlying medication errors were included. Study country, year and design, sample size, follow-up time, ADE/pADE identification method, proportion of ADEs/pADEs and ADEs/pADEs requiring hospital admission, and frequency distribution of adverse outcome, associated drug groups, or medication errors were extracted. DATA SYNTHESIS: Twenty-nine studies met inclusion criteria: 14 were ambulatory-based and 15 were hospital-based. Seven studies enrolled only eldery patients. The median ADE incidence was 14.9 (range 4.0-91.3) per 1000 person-months, and the pADE incidence was 5.6 per 1000 person-months (1.1-10.1). The median ADE preventability rate was 21% (11-38%). The median incidence of ADEs requiring hospital admission was 0.45 (0.10-13.1) per 1000 person-months, and the median incidence of pADEs requiring hospital admission was 4.5 per 1000 person months. Cardiovascular drugs, analgesics, and hypoglycemic agents together accounted for 86.5% of pADEs, and 77.2% of pADEs resulted in symptoms of the central nervous system, electrolyte/renal system, and gastrointestinal tract. Medication errors resulting in pADEs occurred in the prescribing and monitoring stages. The most frequent drug therapy problem and error of commission reported in ambulatory-based studies on pADEs was the use of inappropriate drugs (42.7%; 40.4-450%). For pADEs requiring hospital admission, the most frequent drug therapy problem and error of omission reported was inadequate monitoring (45.4%; range 22.2-69.8%). Failure to prescribe prophylaxis to patients taking nonsteroidal antiinflammatory drugs or antiplatelet drugs frequently caused gastrointestinal toxicirty whereas lack of monitoring of diuretic, hypoglycemic, and anticoagulant use caused over- or under-diuresis, hyper- or hypoglycemia, and bleeding. CONCLUSIONS: ADEs in ambulatory care are common, with many being pre-ventable and many resulting in hospitalization. Quality improvement programs should target errors in prescribing and monitoring, especially for patients using cardiovascular, analgesic, and, hypoglycemic agents.

Keywords: Ambulatory Care, Avoidability, Cardiovascular, Cochrane, Computer-Based Monitor, Disease, Drug, EMBASE, Extraction, Follow-up, Frequency, Gastrointestinal, General Practice, Health Care, Health Services, Health Services Research, Hospital, Hospital Admission, Hospital Admissions, Hospitalization, Hypoglycemia, Intensive-Care, Medication, Medication Error, Medication Errors, Monitoring, Older, Outcome, Outcomes, Outpatients, Population, Practice, Prescribed Drugs, Preventable Adverse Drug Events, Primary, Primary Health Care, PUBMED, Quality, Research, Review, Science, Selection, Symptoms, Systematic, Systematic Review, Systematic Reviews, Therapy, Tract, Web of Science

? Jodlowski, T.Z., Melnychuk, I. and Conry, J. (2007), Linezolid for the treatment of *Nocardia* spp. infections. *Annals of Pharmacotherapy*, **41** (10), 1694-1699.

Full Text: [2007\Ann Pha41, 1694.pdf](2007/Ann%20Pha41,%201694.pdf)

Abstract: OBJECTIVE: To review the available evidence regarding the use of linezolid for the treatment of Nocardia spp. infections. DATA SOURCES: Data were identified through a search of MEDLINE (1966-May 2007), American Search Premier (1975-May 2007), International Pharmaceutical Abstracts (1960-2007), Science Citation Index Expanded (1996-2007), and Cochrane Databases (publications archived until May 2007) using the terms linezolid and Nocardia. STUDY SELECTION AND DATA EXTRACTION: Prospective and retrospective studies, case reports, case series, and in vitro studies were eligible for inclusion if they used linezolid for nocardiosis regardless of site of infection and outcome. DATA SYNTHESIS: We identified 11 published cases of linezolid use for Nocardia spp. infections. The predominant species isolated were N. asteroides (n = 4; 36%) and N. farcinica (n = 3; 27%). Nocardiosis with central nervous system involvement (n = 7; 64%) or disseminated disease (n = 4; 36%) were most common. The main reason for discontinuation of previous antimicrobials was most often related to adverse effects (n = 5; 45%), followed by clinical failure (n = 3; 27%). Linezolid was associated with cure or improvement in all cases (n = 11; 100%). However, the majority of patients developed serious complications that may have led to premature discontinuation of therapy with linezolid, including myelosuppression (n = 5; 45%) or possible/confirmed peripheral neuropathy (n = 2; 18%). CONCLUSIONS: The limited published data suggest that linezolid appears to be an effective alternative to trimethoprim/sulfamethoxazole for the treatment of nocardiosis. Unfortunately, the high cost and potentially serious long-term toxicities of linezolid appear to limit its use and relegate it to salvage therapy alone or in combination with other antimicrobials.

Keywords: Brain Abscesses, Citation, Clinical-Experience, Complications, Cost, Databases, Extraction, Farcinica, Linezolid, Medline, Nervous-System Infections, Nocardia, Optic Neuropathy, Patient, Peripheral Neuropathy, Publications, Science, Science Citation Index, Science Citation Index Expanded, Selection, System, Therapy, Treatment

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Full Text: [2009\Ann Pha43, 268.pdf](2009/Ann%20Pha43,%20268.pdf)

Abstract: BACKGROUND: Scholarship is an essential component of academic pharmacy. Department chairs are considered role models and mentors to junior faculty, but their publication record has not been documented.

OBJECTIVE: To quantify publication patterns of pharmacy practice chairs in general and, specifically, at health sciences center (HSC)-based versus non-HSC-based and public versus private colleges of pharmacy.

METHODS: Pharmacy practice chairs were identified using the 2006-2007 roster of faculty from the American Association of Colleges of Pharmacy. of the 89 colleges of pharmacy in the roster, 11 listed no pharmacy practice chair and 5 listed more than one. Data were collected on the remaining 73 schools by searching each chair’s name on PubMed and Web of Science (WoS). Data on total publications, publications per year, total citations, citations per article, index, and m quotient were collected. RESULTS: A total of 2394 papers published by 73 pharmacy practice chairs were found in a search of PubMed. The mean number of total publications per chair was 33 (95% CI 21 to 44). The mean number of publications per year was 1.4 using PubMed and 1.6 using WoS. Mean h-index was 8.0 (95% CI 6.3 to 9.6). Mean number of total citations was 410 (95% Cl 252 to 568). Thirty-three percent (n = 24) had less than 10 lifetime publications and 18% had more than 50 lifetime publications. HSC-based chairs averaged 51.3 papers while non-HSC-based chairs averaged 19.1 (p < 0.01). Similar data were found for total citations (HSC = 673 vs non-HSC = 216; p < 0.001). Public school chairs had an average of 41.5 articles cited on PubMed, versus 15 for private school chairs (p < 0.01). Public school chairs had an average h-index of 9.7 versus 4.4 for private school chairs (p < 0.001), and an average of 9.2 citations per article compared with 5.2 for private school chairs (p < 0.001).

CONCLUSIONS: These data provide a normative pattern of publication metrics and record for pharmacy practice chairs and demonstrate marked variability in scholarly productivity.

Keywords: Bibliometrics, Chair, Citations, Colleges, Faculty, H-Index, Health Sciences, Impact, Medicine, Papers, Practice Faculty, Productivity, Publication, Publication Record, Publications, PubMED, Scholarship, Scholarship, Schools, Science, Sciences, Scientific-Research, Web of Science

? Kuo, I.F., Pearson, G.J. and Koshman, S.L. (2009), Colchicine for the primary and secondary prevention of pericarditis: An update. *Annals of Pharmacotherapy*, **43** (12), 2075-2081.

Abstract: OBJECTIVE: To review the efficacy and safety of colchicine as primary and secondary prophylaxis for pericarditis. DATA SOURCES: We searched MEDLINE, EMBASE, PUBMED, BIOSIS Previews’ International Pharmaceutical Abstracts, Web of Science, and CENTRAL for controlled studies from database inception date to July 2009. Search terms included colchicine, pericarditis, and postpericardiotomy syndrome (PPS). STUDY SELECTION AND DATA EXTRACTION: Prospective, randomized, controlled trials investigating the use of colchicine in preventing pericarditis were included. Data extracted included design, inclusion criteria, demographics, interventions, background therapy, and pericarditis-related clinical outcomes. DATA SYNTHESIS: Data were synthesized qualitatively, given variable study designs. Three trials were identified. A single trial examining primary prevention evaluated the use of colchicine versus placebo for preventing PPS in patients undergoing cardiopulmonary bypass grafting. No significant reduction in PPS was found. Two studies examined secondary prevention of pericarditis, comparing colchicine plus aspirin versus aspirin alone. One study examined using these comparators to treat a first episode of pericarditis. After 3 months, there was a significant reduction in recurrent pericarditis with colchicine plus aspirin (11.7% vs 33%; p = 0.009). Another study examined this same regimen in recurrent pericarditis, finding a significant reduction in recurrence after 6 months (21% vs 45%; p = 0.02). CONCLUSIONS: Despite limitations in study designs, current evidence suggests a role for colchicine in the secondary prophylaxis for recurrent pericarditis. The evidence for use of colchicine as primary prophylaxis in PPS is indeterminate; therefore, colchicine cannot be recommended routinely. While colchicine should be recommended for the prevention of recurrent pericarditis, questions regarding the optimal regimen and long-term safety profile need to be further elucidated.

Keywords: Acute Pericarditis, Colchicine, Controlled Studies, Diseases, Efficacy, EMBASE, Extraction, Interventions, Management, Medline, Outcomes, Pericarditis, Postpericardiotomy Syndrome, Postpericardiotomy-Syndrome, Prevention, Primary, Primary Prevention, Profile, PUBMED, Recurrence, Recurrent Pericarditis, Recurrent Pericarditis, Relapsing Pericarditis, Review, Risk, Safety, Science, Secondary Prevention, Selection, Therapy, Trial, Web of Science

? Manias, E. and Williams, A. (2010), Medication adherence in people of culturally and linguistically diverse backgrounds: A meta-analysis. *Annals of Pharmacotherapy*, **44** (6), 964-982.

Abstract: BACKGROUND: Medication adherence is of particular importance for people of culturally and linguistically diverse (CALD) backgrounds due to language difficulties, lack of social and organizational supports, lack of access to healthcare resources, and disengagement with the health-care system. OBJECTIVE: To evaluate the impact of interventions to improve medication adherence in people of CALD backgrounds through a systematic review and meta-analysis. METHODS: A search was performed using the following databases: Cochrane Database of Systematic Reviews, Cumulative Index to Nursing & Allied Health Literature, EMBASE, Journals@Ovid, PsychInfo, PUBMED, Science Direct, Scopus, and Web of Science. Databases were searched from January 1978 to October 2009. RESULTS: Forty-six articles reviewed were assessed as being relevant, which included 36 randomized controlled trials, 2 observational cohort studies, and 8 quasi-experimental studies. The most common method for assessing medication adherence was self-reporting measures, such as the Morisky Scale and its modifications. Few studies used combinations of adherence measures, and adherence involving a medication event monitoring system (MEMS) was used in only 6 studies. Individuals of CALD backgrounds were recruited with people of non-CALD backgrounds and subsequent analyses tended to be undertaken of the whole sample. Twenty studies showed statistically significant improvements in medication adherence, 15 of which were randomized controlled trials. Six of the successful interventions involved delivery by a bilingual person or the use of translated materials and 4 involved the use of a conceptual model. Meta-analyses demonstrated modest improvements in medication adherence. CONCLUSIONS: Relatively little high-quality work has been conducted on adherence-enhancing interventions for people of CALD backgrounds. Greater attention needs to be given to examining the needs of specific CALD population groups. Future researchers should consider rigorously testing interventions that take into account the enormous diversity and differences that exist within any particular CALD group.

Keywords: Adherence, African-American, Antiretroviral Therapy, Attention, Automated Calls, Blood-Pressure Control, Cochrane, Cohort Studies, Culturally And Linguistically Diverse Background, Databases, EMBASE, Family Intervention, Health, Health Care, Health Disparities, Impact, Improve Adherence, Intervention, Interventions, Medication, Medication Adherence, Meta-Analysis, Model, Monitoring, Nurse Follow-up, Nursing, PUBMED, Randomized Controlled Trials, Randomized Controlled-Trial, Researchers, Review, Risk Reduction, Scale, Science, Scopus, Social, Systematic, Systematic Review, Web of Science

? Brunetti, L. and Hermes-DeSantis, E.R. (2010), The role of colesevelam hydrochloride in hypercholesterolemia and type 2 diabetes mellitus. *Annals of Pharmacotherapy*, **44** (7-8), 1196-1206.

Abstract: OBJECTIVE: To evaluate the safety and efficacy of colesevelam hydrochloride for the treatment of hypercholesterolemia and type 2 diabetes mellitus. DATA SOURCES: Literature retrieval was accessed through MEDLINE/PUBMED (1950 March 2010), Web of Science (1980-March 2010), and International Pharmaceutical Abstracts (1977 March 2010) using the terms colesevelam, dyslipidemia, hypercholesterolemia, and type 2 diabetes mellitus. References from publications identified were reviewed for additional resources. In addition, abstracts presented at the most recent (2009) American Diabetes Association, American Association of Clinical Endocrinologists, and European Association for the Study of Diabetes annual meetings were searched for relevant original research. STUDY SELECTION AND DATA EXTRACTION: All articles in English identified from the data sources were evaluated. All relevant studies evaluating the safety and efficacy of colesevelam in hypercholesterolemia and/or type 2 diabetes mellitus were included. Priority was placed on data obtained from human randomized controlled trials. DATA SYNTHESIS: Seventeen clinical trials were reviewed and evaluated. of the clinical trials evaluating colesevelam in hypercholesterolemia, 3 evaluated monotherapy, 4 evaluated combination therapy with hydroxymethylglutaryl coenzyme A (HMG-CoA) reductase inhibitors, and 6 evaluated combination therapy with other lipid-lowering therapies. In the type 2 diabetes mellitus trials, colesevelam was evaluated in combination with metformin, sulfonylureas, insulin, and rosiglitazone and sitagliptin. A review of the clinical trials provided evidence that colesevelam monotherapy effectively reduces low-density lipoprotein cholesterol (LDL-C). Additionally, the use of colesevelam in combination with other lipid-lowering therapies further reduces LDL-C. Colesevelam also effectively reduces hemoglobin A(1c) in patients with type 2 diabetes mellitus. The safety and tolerability of colesevelam appear to be improved from that of older-generation bile acid sequestrants, with adverse effects similar to those with placebo in monotherapy and type 2 diabetes mellitus trials. CONCLUSIONS: Colesevelam is a safe and effective option for the treatment of hypercholesterolemia and type 2 diabetes mellitus. It can fulfill a useful role in combination with HMG-CoA reductase inhibitors for hypercholesterolemia and should be considered in patients with type 2 diabetes mellitus with concomitant hypercholesterolemia.

Keywords: Adverse Effects, Bile Acid Sequestrant, Bile-Acid Sequestrant, C-Reactive Protein, Clinical Trials, Colesevelam, Combination Therapy, Density-Lipoprotein Cholesterol, Diabetes, Diabetes Mellitus, Drug-Interactions, Dyslipidemia, Efficacy, Extended-Release Niacin, Extraction, Glucose Control, Glycemic Control, Hmg-Coa Reductase Inhibitors, Human, Hypercholesterolemia, Insulin, Lowers Ldl Cholesterol, Metformin, Monotherapy, Plasma-Glucose, Publications, Randomized Controlled Trials, References, Research, Review, Safety, Science, Selection, Statin Therapy, Therapy, Treatment, Type 2, Type 2 Diabetes, Type 2 Diabetes Mellitus, Web of Science

? Kirk, J.K. and Oldham, E.C. (2010), Hyperglycemia management using insulin in the acute care setting: therapies and strategies for care in the non-critically III patient. *Annals of Pharmacotherapy*, **44** (7-8), 1222-1230.

Abstract: BACKGROUND: Hyperglycemia is prevalent in hospitalized non-critically ill patients and is associated with higher morbidity and mortality. Poor glycemic control is related to elevated costs due to longer hospital stays and higher rates of complications. OBJECTIVE: To review current literature evaluating treatment strategies for management of hyperglycemia in the non-critically ill hospitalized patient and to discuss the role of pharmacists in glycemia management. DATA SOURCES: A literature review (January 2000 January 2010) was conducted via PUBMED, Web of Science, Cumulative Index to Nursing and Allied Health, the Cochrane Library, Combined Health Information Database, and Education Resources Information Center. MeSH terms for diabetes were used along with stress hyperglycemia, insulin therapy, and insulin analogs in combination with non-critically ill, hospitalized, acute care, or inpatient. STUDY SELECTION AND DATA EXTRACTION: All articles identified from the data sources were reviewed for inclusion. Clinical trial reports, practice guidelines, and reviews involving insulin therapies and/or quality improvement initiatives for hyperglycemia in the acute care setting were evaluated. A total of 133 citations were reviewed and an additional 11 citations were identified from reference lists. DATA SYNTHESIS: The association between hyperglycemia and increased mortality is recognized in the acute care setting among critically ill patients; however, data to support glycemia management in non-critically ill patients continue to be established. National consensus guidelines support strategies for glycemia control that focus on insulin therapy and treatment-driven protocols. These initiatives can result in quality improvement when led by multidisciplinary teams, including pharmacists. Literature supports a pharmacist role in glucose monitoring and insulin dosing. CONCLUSIONS: Management of hyperglycemia is a critical component of acute care. Insulin treatment regimens and protocols for non-critically ill patients in the acute care setting are evolving with recognition of ideal glucose targets to prevent adverse outcomes. Glycemia management can be complex and presents opportunities for pharmacist involvement.

Keywords: Acute Care Center, Acute Myocardial-Infarction, Adverse Outcomes, Care, Citations, Clinical Trial, Clinical-Trial, Cochrane, Control, Costs, Critically Ill Patients, Diabetes, Diabetes-Mellitus, Education, Extraction, Glucose Control, Glucose Control, Glycemia, Glycemic Control, Guidelines, Health, Hospital, Hospitalized Patient, Hyperglycemia, Ill Patients, In-Hospital Mortality, Inpatient Management, Insulin, Intensive-Care, Involvement, Literature, Literature Review, Management, Monitoring, Morbidity, Mortality, Nursing, Outcomes, Pharmacist, Pharmacists, Practice, Practice Guidelines, PUBMED, Quality Improvement, Review, Science, Selection, Sliding-Scale Insulin, Stress, Symptoms, Therapy, Treatment, Web of Science

? Pollex, E., Moretti, M.E., Koren, G. and Feig, D.S. (2011), Safety of insulin glargine use in pregnancy: A systematic review and meta-analysis. *Annals of Pharmacotherapy*, **45** (1), 9-16.

Abstract: BACKGROUND: The prevalence of diabetes in women of childbearing age is increasing. As such, the number of pregnancies complicated by diabetes will inevitably increase. New insulin analogues such as the long-acting analogue insulin glargine may represent beneficial treatment options in pregnancy by ensuring that patients achieve excellent glycemic control without risk of maternal hypoglycemia. OBJECTIVE: To determine the fetal safety of insulin glargine use in the treatment of diabetes in pregnancy compared with NPH insulin therapy. METHODS: A systematic review and meta-analysis was performed of all original human studies that reported neonatal outcomes among women with pregestational or gestational diabetes who were managed with either insulin glargine or NPH insulin during pregnancy. A systematic literature search was conducted using MEDLINE, EMBASE, CINAHL, the Cochrane Central Register for Controlled Trials database, and Web of Science from 1980 to June 1, 2010. Outcomes included large size for gestational age, macrosomia, neonatal hypoglycemia, neonatal intensive care unit admissions, birth trauma, congenital anomalies, preterm delivery, perinatal mortality, respiratory distress, and hyperbilirubinemia. Relative risk ratios and weighted mean differences were computed with 95% confidence intervals. RESULTS: Eight studies reporting on a total of 702 women with pregestational or gestational diabetes in pregnancy treated with either insulin glargine (n = 331) or NPH insulin (n = 371) met the inclusion criteria. There were no statistically significant differences in the occurrence of fetal outcomes studied with the use of insulin glargine compared to NPH insulin. CONCLUSIONS: No evidence has been documented for increased adverse fetal outcomes with the use of insulin glargine in pregnancy compared to the use of NPH insulin. These results increase the choices for women requiring basal insulin therapy in pregnancy.

Keywords: Analogue Insulin, Care, Cochrane, Confidence Intervals, Control, Diabetes, Distress, EMBASE, Gestational Diabetes, Human, Hypoglycemia, Insulin, Insulin Glargine, Intensive Care, Intensive Care Unit, Literature, Medline, Meta-Analysis, Mortality, Neonatal Intensive Care, Nph Insulin, Nph Insulin, Outcomes, Perinatal, Perinatal Outcomes, Pregnancy, Pregnancy In Diabetes, Prevalence, Review, Risk, Safety, Science, Systematic, Systematic Review, Therapy, Trauma, Treatment, Type 1 Diabetes, Type 2 Diabetes, Web of Science, Women

? Su, V.C.H., Greanya, E.D. and Ensom, M.H.H. (2011), Impact of mycophenolate mofetil dose reduction on allograft outcomes in kidney transplant recipients on tacrolimus-based regimens: A systematic review. *Annals of Pharmacotherapy*, **45** (2), 248-257.

Abstract: OBJECTIVE: To systematically evaluate the clinical consequences of mycophenolate dose reduction in renal transplant recipients on tacrolimus-based regimens. DATA SOURCES: PUBMED (1949-July 2010), EMBASE (1980-July 2010), Cochrane Database of Systematic Reviews, International Pharmaceutical Abstracts, and Web of Science were searched using the terms mycophenolate mofetil, tacrolimus, dose reduction, and kidney and/or renal transplant. References from publications identified were reviewed. STUDY SELECTION AND DATA EXTRACTION: Studies reporting on rejection rate, allograft survival, or renal function were included and ranked according to the US Preventive Services Task Force classification; excluded were studies that were dose-finding or used cyclosporine only, involved patients on enteric-coated mycophenolate sodium or those with multiorgan transplant, or provided no information on concomitant immunosuppressants. Data extracted were study design, sample size, immunosuppression regimen, type of transplant, and allograft outcomes. DATA SYNTHESIS: of 13 studies included, 1 was level I evidence, 3 were level II-2, 6 were level II-3, and 3 were level III evidence. Three focused on tacrolimus-based regimens, whereas 7 included either cyclosporine or tacrolimus. The only prospective, randomized, multicenter trial demonstrated that early taper of mycophenolate dosage to 1 g/day can be utilized without increased risk of rejection, compared with late tapering, but the rejection rate was high (30-40%). Overall, we found conflicting evidence regarding the impact of mycophenolate dose reduction on rejection rate and allograft loss and that discontinuing mycophenolate led to an increased risk of graft loss as high as 8 fold. Allograft survival was lowest in patients with gastrointestinal complications and those in whom mycophenolate was discontinued, compared with patients with neither gastrointestinal complications nor mycophenolate discontinuation. CONCLUSIONS: Weak evidence suggests that mycophenolate dose modifications, either reduction or discontinuation, may increase rejection rate and graft loss; however, this is more apparent in cyclosporine-based regimens. Prospective, well-designed trials are necessary to definitively determine the impact of dose reduction in renal transplant recipients on tacrolimus-based regimens.

Keywords: Acute Rejection, Allograft Outcomes, Calcineurin Inhibitors, Cochrane, Cyclosporine, EMBASE, Extraction, Follow-up, Gastrointestinal, Gastrointestinal Complications, Graft Outcomes, Immunosuppression, Impact, Information, Kidney, Kidney Transplant, Mycophenolate, Outcomes, Publications, PUBMED, Randomized-Trial, Reduction, References, Renal Function, Renal-Transplant, Review, Risk, Science, Selection, Sodium, Survival, Systematic, Systematic Review, Tacrolimus, Transplant, US, Web of Science

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Full Text: [2011\Ann Pha45, 1144.pdf](2011/Ann%20Pha45,%201144.pdf)

Abstract: OBJECTIVE: To evaluate the use of budesonide for the treatment of autoimmune; hepatitis (AIH). DATA SOURCES: Literature was accessed through PubMed/MEDLINE (1966-June 2011) and Web of Science (1965-June 2011) using the terms autoimmune hepatitis and budesonide. Literature was limited to English-language publications. In addition, references from publications identified were reviewed. STUDY SELECTION AND DATA EXTRACTION: All articles in English identified from the data sources were evaluated. DATA SYNTHESIS: The initial treatment of choice for AIH is prednisone alone or with azathioprine. However, a significant number of patients do not respond adequately or have adverse reactions to this regimen; therefore, alternative treatments are required. Budesonide is an orally administered synthetic corticosteroid with high affinity for the glucocorticoid receptor that undergoes extensive first-pass metabolism. It has Food and Drug Administration approved labeling for the treatment and maintenance of remission of mild-to-moderate Crohn disease involving the ileum and/or ascending colon. One prospective, active-controlled study of budesonide in the treatment of AIH was identified, as well as 5 small open-label studies and 1 retrospective chart review. Budesonide appears to have efficacy in the treatment of AIH, including in patients intolerant to standard therapy with prednisone alone or with azathioprine, with a reduced incidence of corticosteroid-related adverse reactions. However, in patients with AIH and cirrhosis, the efficacy of budesonide may be reduced and the incidence of corticosteroid-related adverse reactions may be increased. CONCLUSIONS: Budesonide may be an additional treatment option for patients with AIH but without cirrhosis who are intolerant to standard therapy with prednisone or prednisone with azathioprine.

Keywords: Administration, Autoimmune, Autoimmune Hepatitis, Azathioprine, Budesonide, Chronic Active Hepatitis, Cirrhosis, Corticosteroid, Cyclosporine, Disease, Efficacy, English, Extraction, Glucocorticoid, Hepatitis, Immunosuppressive Therapy, Incidence, Intolerant, Literature, Mycophenolate-Mofetil, Patients, Publications, Remission, Review, Science, Selection, Steroid-Resistant, Tacrolimus, Therapy, Treatment, Trial, Web of Science

? Baker, W.L. and White, W.B. (2011), Azilsartan medoxomil: A new angiotensin II receptor antagonist for treatment of hypertension. *Annals of Pharmacotherapy*, **45** (12), 1506-1515.

Full Text: [2011\Ann Pha45, 1506.pdf](2011/Ann%20Pha45,%201506.pdf)

Abstract: OBJECTIVE: To evaluate the efficacy, safety, and clinical role of azilsartan medoxomil, an angiotensin II receptor blocker (ARB) that recently gained Food and Drug Administration approval for lowering of blood pressure (BP) in patients with hypertension. DATA SOURCES: A systematic review of the literature was performed through August 2011 using MEDLINE, Web of Science, and International Pharmaceutical Abstracts and the key words and MeSH terms azilsartan, azilsartan medoxomil, TAK-491, TAK-536, and Edarbi. Abstracts presented in the last 2 years from the annual meetings of appropriate medical societies were reviewed in addition to a search of clinicaltrials.gov. STUDY SELECTION AND DATA EXTRACTION: Studies eligible for inclusion were in vitro or in vivo evaluations of azilsartan medoxomil, with no restrictions on patient population or indication. Data related to the patient populations and outcomes of interest were extracted from each publication. DATA SYNTHESIS: Three trials are available in full publication form with others available only as abstracts. Azilsartan medoxomil 40 mg and 80 mg daily significantly improves both systolic and diastolic BP from baseline compared with placebo, and the 80-mg dose has greater efficacy than other ARBs, including olmesartan 40 mg daily and valsartan 320 mg daily. Improvements in both 24-hour BP using ambulatory monitoring and clinic monitoring have been seen with azilsartan medoxomil as well as a higher proportion of patients reaching the goal level. Additional information shows added BP lowering when azilsartan medoxomil is combined with chlorthalidone. Adverse events are similar with azilsartan medoxomil versus other ARBs and include headache, dizziness, urinary tract infections, and fatigue. CONCLUSIONS: Azilsartan medoxomil is a safe and effective ARB with a unique pharmacologic profile versus other agents, including slowed angiotensin II type 1 receptor dissociation rates and improved receptor specificity. Studies have shown azilsartan medoxomil 80 mg once daily to reduce BP to a greater extent than valsartan and olmesartan, with similar safety and tolerability.

Keywords: Administration, Ambulatory Blood-Pressure, Angiotensin Receptor Blocker, At(1)-Receptor Blockers, Azilsartan Medoxomil, Blood, Blood Pressure, Cardiovascular Events, Discontinuation, Dissociation, Dizziness, Efficacy, Extraction, Fatigue, High-Risk Patients, Hydrochlorothiazide, Hypertension, In Vivo, Indication, Information, Interest, International, Literature, Long-Term Reproducibility, Medical, Medline, Monitoring, Outcomes, Patients, Persistence, Pharmaceutical, Pharmacologic, Pressure, Profile, Publication, Review, Safety, Science, Selection, Specificity, Systematic, Systematic Review, Tak-491, Telmisartan, Tolerability, Tract, Type 1, Urinary Tract Infections, Web of Science

# Title: Annals of Plastic Surgery

Full Journal Title: Annals of Plastic Surgery

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Parashar, A., Makkar, S.S., Sharma, R.K. and Nanda, V. (2007), A method to reduce citation errors while compiling bibliographies. *Annals of Plastic Surgery*, **59** (2), 232-233.

Keywords: Absence of E-Mail Address and DOI., Accuracy, Bibliographies, Citation, Citation Errors, Errors, Please Specify Whether I’M Right or Not., Preethi(W51), References

? Singh, N.P. and Trikha, A. (2007), A method to reduce citation errors while compiling bibliographies. *Annals of Plastic Surgery*, **59** (6), 733.

Keywords: Bibliographies, Citation, Citation Errors, Errors

? Parashar, A., Makkar, S., Sharma, R.K. and Nanda, V. (2007), Reply - A method to reduce citation errors while compiling bibliographies. *Annals of Plastic Surgery*, **59** (6), 733.

Keywords: Bibliographies, Citation, Citation Errors, Errors

# Title: Annals of Regional Science

Full Journal Title: [Annals of Regional Science](http://www.springerlink.com/content/100498/?p=6b9b036563c24323bd77bcc2865b0f4e&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0570-1864

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Sarafoglou, N. and Paelinck, J.H.P. (2008), On diffusion of ideas in the academic world: The case of spatial econometrics. *Annals of Regional Science*, **42** (2), 487-500.

Full Text: [2008\Ann Reg Sci42, 487.pdf](2008/Ann%20Reg%20Sci42,%20487.pdf)

Abstract: Spatial econometrics is a fast-growing field in the series of quantitative disciplines, auxiliaries of economics and related social sciences. Space, friction, interdependence, spatio-temporal components, externalities and many other aspects interact and should be treated adequately in this field. The publication of the Paelinck and Klaassen book in the late 1970s generated virtually the field spatial econometrics. This article studies the diffusion of spatial econometrics, through experienced history on the one hand, on the other through bibliometric methods. Although this field was an “Invisible College” up to 2006 (absence of any organization in form of association, conference, journal, etc.), the databases depict a fast diffusion in the past and strong prospects for the future.

Keywords: Partial-Differential Equations, Data Envelopment Analysis, Economics, Models, Sweden

# Title: Annual Review of Plant Physiology

Full Journal Title: Annual Review of Plant Physiology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hind, G, and Olson, J.M. (1968), Electron transport pathways in photosynthesis. *Annual Review of Plant Physiology*, **19** (1), 249-282.

Full Text: [1960-80\Ann Rev Pla Phy19, 249.pdf](1960-80/Ann%20Rev%20Pla%20Phy19,%20249.pdf)

# Title: Annals of the Rheumatic Diseases

Full Journal Title: [Annals of the Rheumatic Diseases](http://www.ingentaconnect.com/content/bmj/ard;jsessionid=1hyj2msu2nc3h.victoria?)

ISO Abbreviated Title: Ann. Rheum. Dis.

JCR Abbreviated Title: Ann Rheum Dis

ISSN: 0003-4967

Issues/Year: 12

Journal Country/Territory: England

Language: English

Publisher: British Med Journal Publ Group

Publisher Address: British Med Assoc House, Tavistock Square, London WC1H 9JR, England

Subject Categories:

Rheumatology: Impact Factor 0.3188, / (2001)

Mela, G.S. and Cimmino, M.A. (1998), An overview of rheumatological research in the European Union. *Annals of the Rheumatic Diseases*, **57** (11), 643-647.

Full Text: [1998\Ann Rhe Dis57, 643.pdf](1998/Ann%20Rhe%20Dis57,%20643.pdf)

Abstract: Objectives-To evaluate the distribution and scope of papers published by authors from the European Union (EU) in rheumatological journals and the impact of rheumatological research in the EU in comparison with that produced elsewhere. Methods-Papers published during the year 1995 in the 17 rheumatological journals screened by ISI were considered. The journal impact factor (IF) was noted. All key words, both those reported by the authors and those attributed by ISI, were identified and their frequency was calculated using a special purpose program. Results-2331 papers were published in the rheumatological literature during 1995. of them, 1316 (56.5%) came from the EU (29.4% from the UK, 17.4% from France, 11.5% from Germany, and 10.8 % from Italy) and 544 (23.3%) from the USA. The mean LF of EU papers was approximately 2 in comparison with 3.5 for the USA and 2.4 for other countries. In 1995, 2680 key words attributed by the authors and 5651 attributed by ISI appeared in the rheumatological literature. Less than a quarter of them was cited more than twice. The leading key words were rheumatoid arthritis for diseases and methotrexate for drugs. Conclusions-Bibliometric findings are useful to follow research trends. These data show the relevance of EU rheumatological research and the high scientific production of small countries. Dispersion of key words should be avoided and journal editors should promote their standardisation

Keywords: Arthritis, Comparison, Data, Diseases, Distribution, Drugs, EU, European Union, France, Germany, Impact, Impact Factor, ISI, Italy, Journal, Journal Editors, Journal Impact, Journal Impact Factor, Journals, Literature, Methotrexate, Papers, Purpose, Relevance, Research, Rheumatoid Arthritis, Scientific Production, Scope, Small, Trends, UK, USA

Mela, G.S. and Cimmino, M.A. (1998), An overview of rheumatological research in the European Union. *Annals of the Rheumatic Diseases*, **57** (11), 643-647.

Full Text: [1998\Ann Rhe Dis57, 643.pdf](1998/Ann%20Rhe%20Dis57,%20643.pdf)

Abstract: Objectives-To evaluate the distribution and scope of papers published by authors from the European Union (EU) in rheumatological journals and the impact of rheumatological research in the EU in comparison with that produced elsewhere. Methods-Papers published during the year 1995 in the 17 rheumatological journals screened by ISI were considered. The journal impact factor (IF) was noted. All key words, both those reported by the authors and those attributed by ISI, were identified and their frequency was calculated using a special purpose program. Results-2331 papers were published in the rheumatological literature during 1995. of them, 1316 (56.5%) came from the EU (29.4% from the UK, 17.4% from France, 11.5% from Germany, and 10.8 % from Italy) and 544 (23.3%) from the USA. The mean LF of EU papers was approximately 2 in comparison with 3.5 for the USA and 2.4 for other countries. In 1995, 2680 key words attributed by the authors and 5651 attributed by ISI appeared in the rheumatological literature. Less than a quarter of them was cited more than twice. The leading key words were rheumatoid arthritis for diseases and methotrexate for drugs. Conclusions-Bibliometric findings are useful to follow research trends. These data show the relevance of EU rheumatological research and the high scientific production of small countries. Dispersion of key words should be avoided and journal editors should promote their standardisation

Keywords: Rheumatology, Bibliometrics, Europe, Arthritis, Impact, Impact Factor, Journal Impact, Journals, Literature, Research, Scientific Production

? Zhang, W., Doherty, M., Leeb, B.F., Alekseeva, L., Arden, N.K., Bijlsma, J.W., Dincer, F., Dziedzic, K., Hauselmann, H.J., Herrero-Beaumont, G., Kaklamanis, P., Lohmander, S., Maheu, E., Martin-Mola, E., Pavelka, K., Punzi, L., Reiter, S., Sautner, J., Smolen, J., Verbruggen, G. and Zimmermann-Gorska, I. (2007), EULAR evidence based recommendations for the management of hand osteoarthritis: Report of a task force of the EULAR standing committee for international clinical studies including therapeutics (ESCISIT). *Annals of the Rheumatic Diseases*, **66** (3), 377-388.

Full Text: [2007\Ann Rhe Dis66, 377.pdf](2007/Ann%20Rhe%20Dis66,%20377.pdf)

Abstract: Objectives: To develop evidence based recommendations for the management of hand osteoarthritis (OA). Methods: The multidisciplinary guideline development group comprised 16 rheumatologists, one physiatrist, one orthopaedic surgeon, two allied health professionals, and one evidence based medicine expert, representing 15 different European countries. Each participant contributed up to 10 propositions describing key clinical points for management of hand OA. Final recommendations were agreed using a Delphi consensus approach. A systematic search of Medline, Embase, CINAHL, Science Citation Index, AMED, Cochrane Library, HTA, and NICE reports was used to identify the best available research evidence to support each proposition. Where possible, the effect size and number needed to treat were calculated for efficacy. Relative risk or odds ratio was estimated for safety, and incremental cost effectiveness ratio was used for cost effectiveness. The strength of recommendation was provided according to research evidence, clinical expertise, and perceived patient preference. Results: Eleven key propositions involving 17 treatment modalities were generated through three Delphi rounds. Treatment topics included general considerations (for example, clinical features, risk factors, comorbidities), non-pharmacological (for example, education plus exercise, local heat, and splint), pharmacological (for example, paracetamol, NSAIDs, NSAIDs plus gastroprotective agents, COX-2 inhibitors, systemic slow acting disease modifying drugs, intra-articular corticosteroids), and surgery. of 17 treatment modalities, only six were supported by research evidence (education plus exercise, NSAIDs, COX-2 inhibitors, topical NSAIDs, topical capsaicin, and chondroitin sulphate). Others were supported either by evidence extrapolated from studies of OA affecting other joint sites or by expert opinion. Strength of recommendation varied according to level of evidence, benefits and harms/costs of the treatment, and clinical expertise. Conclusion: Eleven key recommendations for treatment of hand OA were developed using a combination of research based evidence and expert consensus. The evidence was evaluated and the strength of recommendation was provided.

Keywords: 10-Percent Trolamine Salicylate, Citation, Cost Effectiveness, Delphi, Development, Double-Blind, Education, Effectiveness, Gastrointestinal Toxicity, Health, Hip Osteoarthritis, International, Intraarticular Hyaluronic-Acid, Knee Osteoarthritis, Local, Management, Medicine, Medline, Multidisciplinary, Nonsteroidal Antiinflammatory Drugs, Quality-of-Life, Randomized Controlled-Trial, Research, Rheumatoid-Arthritis, Risk, Risk Factors, Science, Science Citation Index, Surgery, Task, Therapeutics, Topics, Treatment

? Yusuf, E., Kortekaas, M.C., Watt, I., Huizinga, T.W.J. and Kloppenburg, M. (2011), Do knee abnormalities visualised on MRI explain knee pain in knee osteoarthritis? A systematic review. *Annals of the Rheumatic Diseases*, **70** (1), 60-67.

Full Text: [2011\Ann Rhe Dis70, 60.pdf](2011/Ann%20Rhe%20Dis70,%2060.pdf)

Abstract: Objective To systematically evaluate the association between MRI findings (cartilage defects, bone marrow lesions (BML), osteophytes, meniscal lesion, effusion/synovitis, ligamentous abnormalities, subchondral cysts and bone attrition) and pain in patients with knee osteoarthritis (OA) in order to establish the relevance of such findings when assessing an individual patient. Methods The Medline, Web of Science, EMBASE and Cumulative Index to Nursing & Allied Health Literature (CINAHL) databases up to March 2010 were searched without language restriction to find publications with data on the association between MRI findings of knee OA (exposure of interest) and knee pain (outcome). The quality of included papers was scored using a predefined criteria set. The levels of evidence were determined qualitatively using best evidence synthesis (based on guidelines on systematic review from the Cochrane Collaboration Back Review Group). Five levels of evidence were used: strong, moderate, limited, conflicting and no evidence. Results A total of 22 papers were included; 5 had longitudinal and 17 cross-sectional data. In all, 13 reported a single MRI finding and 9 multiple MRI findings. Moderate levels of evidence were found for BML and effusion/synovitis. The OR for BML ranged from 2.0 (no CI was given) to 5.0 (2.4 to 10.5). The OR of having pain when effusion/synovitis was present ranged between 3.2 (1.04 to 5.3) and 10.0 (1.1 to 149). The level of evidences between other MRI findings and pain were limited or conflicting. Conclusions Knee pain in OA is associated with BML and effusion/synovitis suggesting that these features may indicate the origin of pain in knee OA. However, due to the moderate level of evidence these features need to be explored further.

Keywords: Association, Bone, Bone-Marrow Edema, Cartilage Loss, Clinical-Features, Cochrane, Collaboration, Databases, Guidelines, Health, Health-Care, Imaging Findings, Interest, Lesions, Methods, MRI, Nursing, Outcome, Pain, Papers, Publications, Review, Science, Severity, Symptoms, Systematic, Systematic Review, Volume, Web of Science

# Title: Annals of the Royal College of Surgeons of England

Full Journal Title: Annals of the Royal College of Surgeons of England

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Weale, A.R., Edwards, A.G., Lear, P.A. and Morgan, J.D.T. (2006), From meeting presentation to peer-review publication - a UK review. *Annals of the Royal College of Surgeons of England*, **88** (1), 52-56.

Abstract: INTRODUCTION Annual academic surgical meetings provide a forum for the discussion of research. For the wide-spread dissemination of this information, peer-reviewed publication is required. The aim of this study was to compare the amount of presentations which go on to publication from 4 UK-based surgical meetings. MATERIALS AND METHODS We determined whether a presentation had led to a successful publication using PubMed, a median of 28 months following each meeting. We compared the ASGBI publication rate with the meetings of the Vascular Surgical Society (VSSGBI), the Association of Coloproctology of Great Britain and Ireland (ACPGBI) and the British Transplantation Society (BTS). We also compared the median impact factor of journals used. RESULTS The ASGBI and BTS had a similar rate of presentations resulting in publication, with 35% and 36% at 2 years, respectively, The VSS had a significantly greater proportion of presentations resulting in publication (54% at 2 years; P= 0.004), whilst the ACPGBI had significant fewer (24% at 2 years; P= 0.006). There was no difference in the median impact factors of the journals used between the meetings (Kruskal Wallis P= 0.883). CONCLUSIONS There is a significant variation between meetings in terms of turning presentations into publications. However, the majority of abstracts have still not been fully published within 2 years of presentation at the meeting.

Keywords: Abstracts, Academic, Britain, British, Factors, Great Britain, Impact, Impact Factor, Impact Factors, Information, Ireland, Journals, Majority, Meeting, Meeting Abstracts, Meetings, Methods, Peer Review, Peer-Review, Peer-Reviewed, Presentation, Publication, Publication Rate, Publications, Pubmed, Research, Review, Surgery, UK

? Bhasin, N. and Scott, D.J.A. (2007), Publication outcome for research presented at the Vascular Society of Great Britain and Ireland annual meetings. *Annals of the Royal College of Surgeons of England*, **89** (3), 292-297.

Abstract: BACKGROUND The Vascular Society of Great Britain and Ireland (VSGBI) annual meeting is a major international vascular surgery conference. Studies suggest that the percentage of presentations that result in full-text publications are a measure of the quality of the meeting. We investigated the publication outcome of abstracts presented to the VSGBI in 2001 and 2002. MATERIALS AND METHODS We retrospectively identified abstracts from the conference programmes and conducted a detailed electronic Medline and PubMed search to determine publication. We collected data regarding the study design, subject matter, publishing journal, time to publication, institution of origin, impact factors and RAE levels. RESULTS There were 63 publications from 106 abstracts (59.4%), with a median impact factor of 3.507. Prospective observational studies accounted for 20.6% of publications, with abdominal aortic aneurysms being the commonest subject matter (34.9%). The median time to publication was 12 months, with the European Journal of Vascular and Endovascular Surgery publishing 33.3% of the articles. Leicester achieved the highest number of publications and the majority of work came from centres with Research Assessment Exercise (RAE) level scores of 4, university centres accounted for 74.6% of publications. CONCLUSIONS We conclude that when compared to equivalent meetings in other specialties and geographical regions, the annual meeting of the VSGBI is of the very highest quality.

Keywords: Abdominal, Abstracts, Background, Britain, Data, Design, Exercise, Factors, Great Britain, Impact, Impact Factor, Impact Factors, Institution, International, Ireland, Journal, Majority, Measure, Meeting, Meeting Abstracts, Meetings, Methods, Number of Publications, Observational, Observational Studies, Origin, Outcome, Presentation, Programmes, Publication, Publications, Publishing, Pubmed, Quality, Quality of, Rae, Regions, Research, Search, Study Design, Surgery, Surgical Education, Time, University, Vascular Surgery, Work

# Title: Annals of Saudi Medicine

Full Journal Title: [Annals of Saudi Medicine](http://www.saudiannals.net/backissues.asp)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Guan, B., Zhang, X.H., Ma, H.H., Zhou, H.B. and Zhou, X.J. (2010), A meta-analysis of highly active anti-retroviral therapy for treatment of plasmablastic lymphoma (Reprinted from Hematology/Oncology and Stem Cell Therapy, vol 3, pg 7-12). *Annals of Saudi Medicine*, **30** (2), 123-128.

Full Text: [2010\Ann Sau Med30, 123.pdf](2010/Ann%20Sau%20Med30,%20123.pdf)

Abstract: Background and Objectives: Plasmablastic lymphoma is a recently described B-cell derived lymphoma. The prognosis of plasmablastic lymphoma patients is usually poor. We performed a systematic review of the literature on the use of highly active anti-retroviral therapy (HAART) and the prognosis of plasmablastic lymphoma. Methods : A comprehensive search of relevant databases, including Medline, Embase, the Cochrane Controlled Trials Register, the Cochrane Library, and the Science Citation Index yielded ten randomized controlled trials. Trials were divided into two groups according to therapy. The rates of plasmablastic lymphoma were analyzed using a fixed-effects model. Sensitivity analyses (on publication type, statistical model) were performed to further detect and evaluate clinically significant heterogeneity. Tests of survival for plasmablastic lymphoma were also performed by using Kaplan-Meier method. Results : Meta-analysis result showed that the prognosis of plasmablastic lymphoma patients was statistically different in the patients receiving HAART in addition to chemotherapy and/or radiotherapy than in the patients receiving the chemotherapy and/or radiotherapy alone (pooled relative risk=3.04; P=.03). Survival analyses also displayed a statistically significant difference ((2) =6.22, P=.013). Conclusion : HAART in addition to chemotherapy and/or radiotherapy is effective in improving the prognosis of plasmablastic lymphoma. However, the small sample sizes increase the likelihood of bias in the studies in this meta-analysis, and therefore, the results should be taken cautiously.

Keywords: Bias, Citation, Clinical-Trials, Databases, Groups, Heterogeneity, Infection, Literature, Medline, Meta-Analysis, Model, Oral-Cavity, Prognosis, Publication, Quality, Review, Science, Science Citation Index, Systematic Review, Treatment

# Title: Annals of Science

Full Journal Title: Annals of Science

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

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Keywords: Bibliometrics

# Title: Annals of Surgery

Full Journal Title: [Annals of Surgery](http://ovidsp.tx.ovid.com/spa/ovidweb.cgi)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0003-4932

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Cushing, H. (1900), The employment of local an ae sthesia in the radical cure of certain cases of hernia with a note upon the nervous anatomy of the inguinal region. *Annals of Surgery*, **31**, 1-34.

Full Text: [-1959\Ann Sur31, 1.pdf](-1959/Ann%20Sur31,%201.pdf)

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Full Text: [-1959\Ann Sur31, 163.pdf](-1959/Ann%20Sur31,%20163.pdf)

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Full Text: [-1959\Ann Sur32, 843.pdf](-1959/Ann%20Sur32,%20843.pdf)

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Full Text: [-1959\Ann Sur43, 665.pdf](-1959/Ann%20Sur43,%20665.pdf)

? Hill, L.D. (1967), An effective operation for hiatal hernia - An 8 year appraisal. *Annals of Surgery*, **166** (4), 681-692.

Full Text: [1960-80\Ann Sur166, 681.pdf](1960-80/Ann%20Sur166,%20681.pdf)

? Schauer, P.R., Ikramuddin, S., Gourash, W., Ramanathan, R. and Luketich, J. (2000), Outcomes after laparoscopic Roux-en-Y gastric bypass for morbid obesity. *Annals of Surgery*, **232** (4), 515-526.

Full Text: [2000\Ann Sur232, 515.pdf](2000/Ann%20Sur232,%20515.pdf)

Abstract: Objective To evaluate the short-term outcomes for laparoscopic Roux-en-Y gastric bypass in 275 patients with a follow-up of 1 to 31 months.

Summary Background Data The Roux-en-Y gastric bypass is a highly successful approach to morbid obesity but results in significant perioperative complications. A laparoscopic approach has significant potential to reduce perioperative complications and recovery time.

Methods Consecutive patients (n = 275) who met NIH criteria for bariatric surgery were offered laparoscopic Roux-en-Y gastric bypass between July 1997 and March 2000. A 15-mL gastric pouch and a 75-cm Roux limb (150 cm for superobese) was created using five or six trocar incisions.

Results The conversion rate to open gastric bypass was 1%. The start of an oral diet began a mean of 1.58 days after surgery, with a median hospital stay of 2 days and return to work at 21 days. The incidence of early major and minor complications was 3.3% and 27%, respectively. One death occurred related to a pulmonary embolus (0.4%). The hernia rate was 0.7%, and wound infections requiring outpatient drainage only were uncommon (5%), Excess weight loss at 24 and 30 months was 83% and 77%, respectively. In patients with more than 1 year of follow-up, most of the comorbidities were improved or resolved, and 95% reported significant improvement in quality of life.

Conclusion Laparoscopic Roux-en-Y gastric bypass is effective in achieving weight loss and in improving comorbidities and quality of life while reducing recovery time and perioperative complications.

Keywords: Vertical Banded Gastroplasty, Open Cholecystectomy, Surgery, Operation, Complications

? Nguyen, N.T., Goldman, C., Rosenquist, J., Arango, A., Cole, C.J., Lee, S.J. and Wolfe, B.M. (2001), Laparoscopic versus open gastric bypass: A randomized study of outcomes, quality of life, and costs. *Annals of Surgery*, **234** (3), 279-289.

Full Text: [2001\Ann Sur234, 279.pdf](2001/Ann%20Sur234,%20279.pdf)

Abstract: Objective To compare outcomes, quality of life (QOL), and costs of laparoscopic and open gastric bypass (GBP).

Summary Background Data Laparoscopic GBP has been reported to be a safe and effective approach for the treatment of morbid obesity. The authors performed a prospective randomized trial to compare outcomes, QOL, and costs of laparoscopic GBP with those of open GBP.

Methods From May 1999 to March 2001, 155 patients with a body mass index (BMI) of 40 to 60 kg/m(2) were randomly assigned to undergo laparoscopic (n = 79) or open (n = 76) GBP. The two groups were similar in age, sex ratio, mean BMI, and comorbidities. Main outcome measures included operative time, estimated blood loss, length of hospital stay, operative complications, percentage of excess body weight loss, and time to return to activities of daily living and work. Changes in QOL were assessed using the SF-36 Health Survey and the bariatric analysis of reporting outcome system (BARDS). Operative and hospital costs of the two operations were also compared

Results There were no deaths in either group. Mean operative time was longer for laparoscopic GBP than for open GBP, but operative blood loss was less. Two (2.5%) of the 79 patients in the laparoscopic group required conversion to laparotomy. Median length of hospital stay was shorter for laparoscopic GBP patients (3 vs 4 days). The rate of postoperative anastomotic leak was similar between groups. Wound-related complications such as infection (10.5 vs 1.3%) and incisional hernia (7.9 vs 0%) were more common after open GBP; late anastomotic stricture was less frequent after open GBP (2.6 vs 11.4%). Time to return to activities of daily living and work were shorter after laparoscopic GBP than after open GBP. Weight loss at 1 year was similar between groups. Preoperative SF-36 scores were similar between groups; however, at 1 month after surgery, laparoscopic patients had better physical conditioning, social functioning, general health, and less body pain than open GBP patients. At 6 months, the BARDS outcome was classified as good or better in 97% of laparoscopic GBP patients compared with 82% of open GBP patients. Operative costs were higher for laparoscopic GBP patients, but hospital costs were lower.

Conclusions Laparoscopic GBP is a safe and cost-effective alternative to open GBP. Despite a longer operative time, patients undergoing laparoscopic GBP benefited from less blood loss, a shorter hospital stay, and faster convalescence. Laparoscopic GBP patients had comparable weight loss at 1 year but a more rapid improvement in QOL than open GBP patients. The higher initial operative costs for laparoscopic GBP were adequately offset by the lower hospital costs.

Keywords: Roux-en-Y, Morbid-Obesity, Operation, Surgery, Therapy

? Gladman, M.A., Scott, S.M., Lunniss, P.J. and Williams, N.S. (2005), Systematic review of surgical options for idiopathic megarectum and megacolon. *Annals of Surgery*, **241** (4), 562-574.

Full Text: [2005\Ann Sur241, 562.pdf](2005/Ann%20Sur241,%20562.pdf)

Abstract: Objective: A subgroup of patients with intractable constipation has persistent dilatation of the bowel, which in the absence of an organic cause is termed idiopathic megabowel (IMB). The aim of this systematic review was to evaluate the published outcome data of surgical procedures for IMB in adults. Methods: Electronic searches of the MEDLINE (PubMed) database, Cochrane Library, EMBase, and Science Citation Index were performed. Only peer-reviewed articles of surgery for IMB published in the English language were evaluated. Studies of all surgical procedures were included, providing they were performed on 3 or more patients, and overall success rates were documented. Studies were critically appraised in terms of design and methodology, inclusion criteria, success, mortality and morbidity rates, and functional outcomes. Results: A total of 27 suitable studies were identified, all evidence was low quality obtained from case series, and there were no comparative studies. The studies involved small numbers of patients (median 12, range 3-50), without long-term follow-up (median 3 years, range 0.5-7). Inclusion of subjects, methods of data acquisition, and reporting of outcomes were extremely variable. Subtotal colectomy was successful in 71.1% (0%-100%) but was associated with significant morbidity related to bowel obstruction (14.5%, range 0%-29%). Segmental resection was successful in 48.4% (12.5%-100%), and recurrent symptoms were common (23.8%). Rectal procedures achieved a successful outcome in 71% to 87% of patients. Proctectomy, the Duhamel, and pull-through procedures were associated with significant mortality (30/6-25%) and morbidity (6%-29%). Vertical reduction rectoplasty (VRR) offered promising short-term success (83%). Pelvic-floor procedures were associated with poor outcomes. A stoma provided a safe alternative but was only effective in 65% of cases. Conclusions: Outcome data of surgery for IMB must be interpreted with extreme caution due to limitations of included studies. Recommendations based on firm evidence cannot be given, although colectomy appears to be the optimum procedure in patients with a nondilated rectum, restorative proctocolectomy the most suitable in those with dilatation of the colon and rectum, and VRR in those patients with dilatation confined to the rectum. Appropriately designed studies are required to make valid comparisons of the different procedures available.

Keywords: Acquired Megacolon, Adults, Articles, Case Series, Chronic Constipation, Citation, Criteria, Database, Duhamel Operation, English, Fecal Incontinence, Functional Gastrointestinal Disorders, Hirschsprungs-Disease, Language, Medline, Methodology, Methods, Outcomes, Reduction, Restorative Proctocolectomy, Review, Science, Science Citation Index, Subtotal Colectomy, Surgery, Systematic Review

? Manterola, C., Pineda, V., Vial, M. and Losada, H. (2006), What is the methodologic quality of human therapy studies in ISI surgical publications? *Annals of Surgery*, **244** (5), 827-832.

Full Text: [2006\Ann Sur244, 827.pdf](2006/Ann%20Sur244,%20827.pdf)

Abstract: Objective: To determine the methodologic quality of therapy articles about humans published in ISI surgical journals, and to explore the association between methodologic quality, origin, and subject matter. Summary Background Data: It is supposed that ISI journals contain the best methodologic articles. Methods: This is a bibliometric study. All journals listed in the 2002 ISI under the subject heading of “Surgery” were included. A simple randomized sampling was conducted for selected journals (Annals of Surgery, The American Surgeon, Archives of Surgery, British Journal of Surgery, European Journal of Surgery, Journal of the American College of Surgeons, Surgery, and World Journal of Surgery). Published articles related to therapy on humans of the selected journals were reviewed and analyzed. All kinds of clinical designs were considered, excluding editorials, review articles, letters to the editor, and experimental studies. The variables considered were: place of origin, design, and the methodologic quality of articles, which was determined by applying a valid and reliable scale. The review was performed interchangeably and independently by 2 research teams. Descriptive and analytical statistics were used. Statistical significance was defined as P values less than 1%. Results: A total of 653 articles were studied. Studies came predominantly from the United States and Europe (43.6% and 36.8%, respectively). The subject areas most frequently found were digestive and hepatobiliopancreatic surgery (29.1% and 24.5%, respectively). Average and median methodologic quality scores of the entire series were 11.6 +/- 4.9 points and 11 points, respectively. The association between methodologic quality and journals was determined. Also, the association between methodologic quality and origin was observed, but no association with subject area was verified. Conclusions: The methodologic quality of therapy articles published in the journals analyzed is low; however, statistical significance was determined between them. Association was observed between methodologic quality and origin, but not with subject matter.

Keywords: Bibliometric Study, Clinical, Design, Europe, Human, Humans, ISI, Low, Matter, Publications, Quality, Randomized, Research, Review, Sampling, Scale, Statistics, Surgery, Therapy, United States

? Diener, M.K., Knaebel, H.P., Heukaufer, C., Antes, G., Buchler, M.W. and Seiler, C.M. (2007), A systematic review and meta-analysis of pylorus-preserving versus classical pancreaticoduodenectomy for surgical treatment of periampullary and pancreatic carcinoma. *Annals of Surgery*, **245** (2), 187-200.

Full Text: [2007\Ann Sur245, 187.pdf](2007/Ann%20Sur245,%20187.pdf)

Abstract: Objective: Comparison of effectiveness between the pylorus-preserving pancreaticoduodenectomy (“pylorus-preserving Whipple” [PPW]) and the classic Whipple (CW) procedure. Methods: A systematic literature search (Medline, Embase, Cochrane Library, Biosis, Science Citation Index, Ovid Journals) was performed to identify all eligible articles. Randomized controlled trials (RCTs) comparing PPW versus CW for periampullary and pancreatic carcinoma were eligible for inclusion. The methodologic quality of included studies was evaluated independently by 2 authors. Quantitative data on perioperative parameters (blood loss, transfusion, operation time, and length of hospital stay), mortality, morbidity, and survival were extracted from included studies for meta-analysis. Pooled estimates of overall treatment effect were calculated using a random effects model. Results: In total, 1235 abstracts were retrieved and checked for eligibility and 6 RCTs finally included. The critical appraisal revealed vast heterogeneity with respect to methodologic quality and outcome parameters. The comparison of overall in-hospital mortality (odds ratio, 0.49; 95% Cl, 0.17 to 1.40; P = 0.18), morbidity (odds ratio 0.89; 95% Cl, 0.48 to 1.62; P = 0.69), and survival (hazard ratio, 0.74; 95% Cl, 0.52 to 1.07; P = 0.11) showed no significant difference. However, operating time (weighted mean difference, -68.26 minutes; 95% CI, -105.70 to -30.83; P = 0.0004), and intraoperative blood loss (weighted mean difference, -766 mL; 95% Cl, -965.26 to -566.74; P = 0.00001) were significantly reduced in the PPW group. Conclusion: Hence, in the absence of relevant differences in mortality, morbidity, and survival, the PPW seems to be as effective as the CW. Given obvious clinical and methodological interstudy heterogeneity, efforts should be intensified in the future to perform high quality RCTs of complex surgical interventions on the basis of well defined outcome parameters.

Keywords: Articles, Citation, Clinical-Trials, Comparison, Complex, Ductal Adenocarcinoma, Effectiveness, Extended Retroperitoneal Lymphadenectomy, Heterogeneity, Journals, Literature, Medline, Meta-Analysis, Model, Multicenter Trial, Postoperative Complications, Prospective-Randomized-Trial, Quality-of-Life, Randomized Controlled Trials, Review, Risk-Factors, Science, Science Citation Index, Standard Pancreaticoduodenectomy, Systematic Review, Treatment, Whipple Procedure

? Diener, M.K., Rahbari, N.N., Fischer, L., Antes, G., Buchler, M.W. and Seiler, C.M. (2008), Duodenum-preserving pancreatic head resection versus pancreatoduodenectomy for surgical treatment of chronic pancreatitis - A systematic review and meta-analysis. *Annals of Surgery*, **247** (6), 950-961.

Full Text: [2008\Ann Sur247, 950.pdf](2008/Ann%20Sur247,%20950.pdf)

Abstract: Objective: The optimal choice of technique for the surgical treatment of pancreatic head lesions in chronic pancreatitis is still under debate. This systematic review and meta-analysis aims to compare the effectiveness and safety of duodenum-preserving pancreatic head resection (DPPHR) versus pancreatoduodenectomy (PD) by means of parameters of mortality and morbidity and functional outcomes and quality of life. Methods: A systematic literature search (Medline, Embase, Biosis, The Cochrane Library, and Science Citation Index) was performed to identify randomized controlled trials (RCTs) comparing DPPHR and PD, Included literature was assessed and extracted by 2 independent reviewers. A meta-analysis of pain relief (primary end point), several parameters of short- and long-term measures and quality of life, was done using the random effects-model. Results: In total, 1284 citations were checked for eligibility and 4 RCTs were included. The critical appraisal revealed a heterogeneous methodological quality of included trials. Comparing DPPHR versus PD, postoperative pain relief, overall mortality, and morbidity showed no significant difference. Intraoperative blood replacement, hospital stay, weight gain, exocrine insufficiency, occupational rehabilitation, and quality of life were significantly improved in the DPPHR group. Conclusion: DPPHR and PD seem to be equally effective in terms of postoperative pain relief, overall morbidity, and incidence of postoperative endocrine insufficiency. However, the presented findings suggest superiority of DPPHR in the treatment of chronic pancreatitis with regard to several peri and postoperative outcome parameters and quality of life. Further RCTs are eagerly awaited to prove these findings.

Keywords: Cancer, Checklist, Chronic, Citation, Citations, Diagnosis, Drainage, Effectiveness, Literature, Medline, Meta-Analysis, Methodological Quality, Outcomes, Pain, PD, Primary, Quality-of-Life, Randomized Clinical-Trials, Rehabilitation, Review, Science, Science Citation Index, Statement, Surgery, Systematic Review, Treatment, Whipple

? Brooke, B.S., Nathan, H. and Pawlik, T.M. (2009), Trends in the quality of highly cited surgical research over the past 20 Years. *Annals of Surgery*, **249** (1), 162-167.

Full Text: [2009\Ann Sur249, 162.pdf](2009/Ann%20Sur249,%20162.pdf)

Abstract: Objective: To evaluate whether the methodologic quality of the most highly cited surgical clinical evidence has improved over the past 20 years. Summary Background Data: There have been increasing efforts to promote the practice of evidence-based medicine among surgeons, although it is unclear whether high-quality evidence is being used. Methods: A bibliometric review was performed among general surgery and medicine journals to identify the 50 most highly cited general surgery clinical research studies from 4 consecutive time periods (1985-1989, 1990-1994, 1995-1999, 2000-2004). Methodologic characteristics and overall data quality for all 200 highly cited studies were assessed by 3 independent reviewers using the validated GRADE scoring system and trends over time were analyzed. Results: Among 200 extracted articles, the quality of evidence was graded as very low in the majority of studies (48%); fewer studies contained data of low (13%), moderate (13%), or high (26%) quality. Study quality significantly improved over the time periods examined, with an increase in the proportion of studies graded as high quality from 12% in 1985 to 1989 to 40% in 2000 to 2004 (P < 0.001). The improvement in data quality over time was associated with an increased proportion of randomized trials (26% vs. 48%; P < 0.05) and increased reporting of adjusted, multivariate regression analyses (22% vs. 54%; P < 0.001). Conclusions: There have been significant improvements in the quality of the most highly cited surgical evidence, characterized by more randomized trials and improved statistical methodology. These findings suggest that surgeons are increasingly recognizing and citing higher quality surgical evidence.

Keywords: Bibliometric, Evidence-Based Medicine, Evidence-Based Surgery, Journals, Quality, Recommendations, Research, Standards, Statement, Strength, Surgery, System, Trends, Trials

? Schmitz, C.C., Rothenberger, D.A., Trudel, J.L. and Wolff, B.G. (2009), Career decisions and the structure of training an american board of colon and rectal surgery survey of colorectal residents. *Annals of Surgery*, **250** (1), 62-67.

Full Text: [2009\Ann Sur250, 62.pdf](2009/Ann%20Sur250,%2062.pdf)

Abstract: Objective: To investigate potential impacts of restructuring general surgery training on colorectal (CR) surgery recruitment and expertise. Summary Background Data: In response to the American Surgical Association Blue Ribbon Committee report on surgical education (2004), the American Board of Colon and Rectal Surgery, working with the Accreditation Council for Graduate Medical Education and American Board of Surgery, established a committee (2006) to review residency training curricula and study new pathways to certification as a CR surgeon. To address concerns related to shortened general surgery residency, the American Board of Colon and Rectal Surgery committee surveyed recent, Current, and entering CR residents on the timing and factors associated with their career choice and opinions regarding restructuring. Methods: A 10-item, online survey of 189 CR surgeons enrolled in the class years of 2005, 2006, and 2007 was administered and analyzed May to July 2007. Results: One hundred forty-five CR residents responded (77%); results were consistent across class years and types of general surgery training program. Seventy percent of respondents had rotated onto a CR service by the end of their PGY-2 year. Most identified CR as a career interest in their PGY-3 or PGY-4 year. Overall interest in CR surgery, the influence of CR mentors and teachers, and positive exposure to CR as PGY-3, PGY-4, or PGY-5 residents were the top cited factors influencing choice decisions. Respondents were opposed to restructuring by a 2:1 ratio, primarily because of concerns about inadequate training and lack of time to develop technical expertise. Conclusions: Shortening general surgery residency would not necessarily limit exposure to CR rotations and mentors unless such rotations are cut. The details of proposed restructuring arc critical.

Keywords: Choice, Education, General-Surgery, Medical-Students, Programs

? Memon, M.A., Subramanya, M.S., Khan, S., Hossain, M.B., Osland, E. and Memon, B. (2011), Meta-Analysis of D1 Versus D2 Gastrectomy for Gastric Adenocarcinoma. *Annals of Surgery*, **253** (5), 900-911.

Full Text: [2011\Ann Sur253, 900.pdf](2011/Ann%20Sur253,%20900.pdf)

Abstract: Objectives: To conduct a meta-analysis of randomized controlled trials evaluating the efficacy and drawbacks of limited (D1) versus extended lymphadenectomy (D2) for proven gastric adenocarcinoma. Methods: A search of Cochrane, Medline, PubMed, Embase, Science Citation Index and Current Contents electronic databases identified randomized controlled trials published in the English language between 1980 and 2008 comparing the outcomes of D1 versus D2 gastrectomy for gastric adenocarcinoma. The meta-analysis was prepared in accordance with the Preferred Reporting Items for Systematic reviews and Meta-analyses statement. The 6 outcome variables analyzed included length of hospital stay; overall complication rate; anastomotic leak rate; reoperation rate; 30-day mortality rate and 5-year survival rate. Random effects meta-analyses were performed using odds ratios (OR) and weighted mean differences (WMD). Results: Six trials totaling 1876 patients (D1=946, D2=930) were analyzed. In 5 of the 6 outcomes the summary point estimates favored D1 over D2 group with a statistically significant reduction of (i) 6.37 days reduction in hospital stay (WMD -6.37, confidence interval [CI] -10.66, -2.08, P = 0.0036); (II) 58% reduction in relative odds of developing postoperative complications (OR 0.42, CI 0.27, 0.66, P = 0.0002); (iii) 60% reduction in anastomotic breakdown (OR 0.40, CI 0.25, 0.63, P = 0.0001); (iv) 67% reduction in reoperation rate (OR 0.33, CI 0.15, 0.72, P = 0.006); and (v) 41% reduction in 30-day mortality rate (OR 0.59, CI 0.40, 0.85, P = 0.0054). Lastly there was no significant difference in the 5-year survival (OR 0.97, CI 0.78, 1.20, P = 0.7662) between D1 and D2 gastrectomy patients. Conclusions: On the basis of this meta-analysis we conclude that D1 gastrectomy is associated with significant fewer anastomotic leaks, postoperative complication rate, reoperation rate, decreased length of hospital stay and 30-day mortality rate. Finally, the 5-year survival in D1 gastrectomy patients was similar to the D2 cohort.

Keywords: Cancer-Study-Group, Carcinoma, Clinical-Trials, Extended Lymphadenectomy, Funnel-Plot, Lymph-Node Dissection, Randomized Controlled-Trials, Surgery, Surgical Trial, Survival

# Title: Annals of Surgical Oncology

Full Journal Title: [Annals of Surgical Oncology](http://www.springerlink.com/content/112644/?p=bd29d5e4c6a34ac3aef8beca72fa4420&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Charles M. Balch, C.M., Roh, M.S., Bland, K.I., Brennan, M.F., Copeland, E.M., Morton, D.L., Niederhuber, J.E. and Pollock, R.E. (2003), *Annals of Surgical Oncology* impact factor/rating has dramatically increased. *Annals of Surgical Oncology*, **10** (1), 1-3.

Full Text: [2003\Ann Sur Onc10, 1.pdf](2003/Ann%20Sur%20Onc10,%201.pdf)

# Title: Annals of Thoracic Surgery

Full Journal Title: [Annals of Thoracic Surgery](http://www.sciencedirect.com/science/journal/00034975)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mavroudis, C. and Sade, R.M. (2003), The Southern Thoracic Surgical Association 50th Anniversary Celebration: The impact of STSA pediatric cardiothoracic surgery manuscripts on surgical practice. *Annals of Thoracic Surgery*, **76** (5), S47-S67.

Full Text: [2003\Ann Tho Sur76, S47.pdf](2003/Ann%20Tho%20Sur76,%20S47.pdf)

Abstract: Background. Members of the Southern Thoracic Surgical Association (STSA) have presented important pediatric cardiothoracic surgery papers at the annual meetings over the last 50 years. In order to determine the influence of these presentations on the practice of surgery, a review was undertaken. Early papers were characterized by emerging advances in open-heart surgery, anatomic congenital heart studies, and electrophysiologic discoveries that extended life with pacemakers. Later years were characterized by innovative myocardial preservation methods, improved cardiopulmonary bypass techniques, expanded homograft availability, emphasis on accurate repairs, intraoperative transesophageal echocardiography, and cardiopulmonary transplantation. Methods. All but one of the scientific programs of the annual meetings (that of 1964) were located. The programs were reviewed and 180 presentations were identified on topics in congenital heart disease, pediatric thoracic disease, and pediatric thoracic wall abnormalities. of those 180 oral presentations, 155 manuscripts (86%) were eventually published or in press and available for critical review and analysis. Manuscripts were grouped by diagnosis or therapeutic intervention. We determined a “cumulative citation frequency” (CCF), which measures the number of times an article is cited in the bibliography of related papers in the universe of participating journals. The selected manuscripts were compared with the historic landmark contributions and the existing trends at the time, and the number of articles both by individual authors and from institutions were tallied. Results. Grouping by authors and institutions showed that 100 of 155 pediatric cardiothoracic manuscripts (65%) originated from 13 institutions. The CCT for the 20 leading articles ranged from 26 to 93. Conclusions. This historical STSA 50-year record of pediatric cardiothoracic advances was accomplished in a milieu of collegial respect and camaraderie. Our annual meetings over the years have provided a venue for thoracic surgeons to share their ideas, innovations, and scientific inquiry. These contributions have significantly affected the practice of pediatric cardiothoracic surgery. The STSA has worked for 50 years and we trust that it will work for another 50 years and beyond. (C) 2003 by The Society of Thoracic Surgeons.

Keywords: Advances, Analysis, Availability, Bibliography, Cardiopulmonary, Cardiopulmonary Bypass, Citation, Congenital, Congenital Heart Disease, Diagnosis, Echocardiography, Heart, Impact, Institutions, Intervention, Journals, Life, Methods, Oral, Papers, Pediatric, Practice, Record, Review, Surgery, Techniques, Therapeutic, Transplantation, Trends, Trust, Work

? Huen, S.C. and Parikh, C.R. (2012), Predicting acute kidney injury after cardiac surgery: A systematic review. *Annals of Thoracic Surgery*, **93** (1), 337-347.

Full Text: [2012\Ann Tho Sur93, 337.pdf](2012/Ann%20Tho%20Sur93,%20337.pdf)

Abstract: Acute kidney injury (AKI) after cardiac surgery confers a significant increased risk of death. Several risk models have been developed to predict postoperative kidney failure after cardiac surgery. This systematic review evaluated the available risk models for AKI after cardiac surgery. Literature searches were performed in the Web of Science/Knowledge, Scopus, and MEDLINE databases for articles reporting the primary development of a risk model and articles reporting validation of existing risk models for AKI after cardiac surgery. Data on model variables, internal or external validation (or both), measures of discrimination, and measures of calibration were extracted. The systematic review included 7 articles with a primary development of a prediction score for AKI after cardiac surgery and 8 articles with external validation of established models. The models for AKI requiring dialysis are the most robust and externally validated. Among the prediction rules for AKI requiring dialysis after cardiac surgery, the Cleveland Clinic model has been the most widely tested thus far and has shown high discrimination in most of the tested populations. A validated score to predict AKI not requiring dialysis is lacking. Further studies are required to develop risk models to predict milder AKI not requiring dialysis after cardiac surgery. Standardizing risk factor and AKI definitions will facilitate the development and validation of risk models predicting AKI. (Ann Thorac Surg 2012;93:337-47) (C) 2012 by The Society of Thoracic Surgeons.

Keywords: Acute Kidney Injury, Acute-Renal-Failure, Bypass-Grafting Surgery, Cross-Validation, Databases, Definitions, Development, Dialysis, Discrimination, External Validation, Injury, Kidney, Literature, Medline, Methodological Standards, Model, Open-Heart-Surgery, Primary, Replacement Therapy, Review, Risk, Risk Factor, Risk Models, Scopus, Surgery, Systematic, Systematic Review, Thoracic Surgeons, Validation, Valve Surgery

# Title: Annals of Tourism Research

Full Journal Title: Annals of Tourism Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

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Subject Categories:

: Impact Factor

Palmer, A.L., Sesé, A. and Montaño, J.J. (2005), Tourism and statistics: Bibliometric study 1998–2002. *Annals of Tourism Research*, **32** (1), 167-178.

Full Text: [2005\Ann Tou Res32, 167.pdf](2005/Ann%20Tou%20Res32,%20167.pdf)

Abstract: The use of statistics in any scientific discipline can be considered a key element in evaluating its degree of maturity and demonstrates the generation of nonspeculative knowledge. The aim of this study is to carry out a bibliometric analysis of the use of statistical methods in tourism research. To accomplish this, a group of 12 tourism journals published within a 5-year period (1998–2002) were chosen and 1,790 articles were reviewed by means of a taxonomy with 24 statistical categories. The main results show the percentage of articles that apply statistical techniques as compared to those that do not, and a ranking of the techniques most often used and their distribution according to journal.

Keywords: Bibliometric, Bibliometric Analysis, Bibliometrics, Journals, Knowledge, Research, Statistical Methods, Statistics, Taxonomy

# Title: Annals of Transplantation

Full Journal Title: [Annals of Transplantation](http://www.annalsoftransplantation.com/)

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: Impact Factor

? Nourbala, M.H., Taheri, S., Habibi, R., Abolhasani, E., Nemati, E., Pourfarziani, V., Abbaszadeh, S. and Einollahi, B. (2008), “Transplantation” research output by Muslim Nations: Current status, trends and future outlook. *Annals of Transplantation*, **13** (2), 21-27.

Full Text: [2008\Ann Tra13, 21.pdf](2008/Ann%20Tra13,%2021.pdf)

Abstract: Bibliometric measurement of scientific research production is one of the most practical methods for evaluating scientific situations of any nations. In this study, we assessed the number of scientific publications by authors from Muslim nations in journals indexed in Pubmed under “transplantation” subject. We found that Muslim nations have relatively very low publication rate in the field of transplantation. Moreover, except for Turkey, we did not detect an uplifting trend for the surveyed nations. Iran had quiet irregular trend with a very sharp missile like upwarding trend in 2007. In summary, Muslim nations with notable practice in transplantation should more fund and concentrate on scientific aspects of the practice for resolving local health dilemmas as well as exploring basic science for improving prognosis and quality of life of renal transplant patients.<br/>.

Keywords: Concentrate, Dilemmas, Field, Health, Iran, Journals, Life, Local, Measurement, Methods, Nations, Practice, Prognosis, Publication, Publications, Quality, Quality of, Quality of Life, Renal, Renal Transplant, Research, Science, Scientific Publications, Scientific Research, Transplantation, Trend, Trends, Turkey

? Assari, S. (2008), How Iran could maintain its peak of transplantation publication? *Annals of Transplantation*, **13** (3), 48-49.

Full Text: [2008\Ann Tra13, 48.pdf](2008/Ann%20Tra13,%2048.pdf)

? Assari, S. (2009), Domestic versus international Iranian transplantation publication: A comparative study. *Annals of Transplantation*, **14** (3), 58-61.

Full Text: [2009\Ann Tra14, 58.pdf](2009/Ann%20Tra14,%2058.pdf)

Abstract: Background: Scientific articles are a source of information for other researchers. The aim of the current study was to compare the characteristics of the transplantation related research efforts which have been published in domestic journals and Medline indexed journals from Iran between 1993 and 2003. Material/Methods: Within the study period, 601 transplantation scientific papers had been published from Iran, either in 91 domestic (www.iranmedex.com) or international journals (www.ncbi.com) for all the biomedical articles published between 1993 and 2003 in 91 Iranian journals. The search was conducted using “transplantation” or “transplant” as key words. A printed copy of the papers (if available), was reviewed to identify the transplanted organ, study design, number of authors, and type of article. Results: Among 601 articles, 545 (90.6%) had been published in domestic journals, and 56 (9.4%) in Medline indexed journals. Frequency of original articles was significantly higher among domestic journals (84.4% vs. 62.5%, p=0.001). The organ type was not significantly different between domestic or Medline indexed journals (61.7%, 71.4%, p=0.556). Mean author numbers was significantly less among domestic in comparison to Medline indexed journals (3.6±2.2 vs. 4.6±3.0, p=0.047). Conclusions: It seems that Iranian scientific database is a more important database, not only by means of quantity, but also by means of research characteristics, such as originality of research. So, domestic scientific databases should be regarded as a pool of valuable information, and should be introduced to researchers of other countries, such a Middle East Society for Organ Transplantation region.

Keywords: Bibliometric Studies, Domestic Databases, Manuscripts, Medline, Research, Transplantation

# Title: Annals of Tropical Medicine and Parasitology

Full Journal Title: [Annals of Tropical Medicine and Parasitology](http://thesius.ingentaselect.com/vl=776195/cl=47/nw=1/rpsv/cw/maney/00034983/contp1.htm)

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Public, Environmental & Occupational Health: Impact Factor, 0.989, 50/85 (1999); Impact Factor 1.049, 50/88 (2001)

Parasitology: Impact Factor, 0.989, (1999); Impact Factor 1.049, 10/22 (2001)

Tropical Medicine: Impact Factor, 0.989, (1999); Impact Factor 1.049, 4/12 (2001)

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Abstract: During 1982, ecological factors associated with freshwater pollution were investigated in Idere, a rural Nigerian community with endemic guinea worm infection. Data were collected on the quality of all pond water sources, and on rainfall patterns and potable piped water available in the community. Pond water provided 76% of the total water used in Idere. This source of drinking water provided the classical ecological environment for the transmission of Dracunculus medinensis, other helminth parasites and bacterial enteric infections. The bacteriological analysis of drinking water from the ponds reflects the absence of sanitary arrangements for human waste disposal in the community, as the ponds are collectors of storm run-offs. Okina, the spring-fed pond which was nearest to the households, was the most reliable year-round source of water to the community; however, Okina also contained the highest density of infective Thermocyclops and the highest faecal coliform (FC) to faecal Streptococcus (FS) ratio (FC/FS), thus providing a central reservoir for guinea worm and bacterial infections. The transmission season of guinea worm infection corresponded with the period of greatest water scarcity in Idere. The amount of portable water available to Idere residents in 1981 was 3.6 litres per person per day. Frequent mechanical breakdowns, electric power failures, lack of fuel to run the water pumping engines and the direct link of the water pipeline supplying water to Idere with a water pipeline serving another major city in the same district were some of the reasons for potable water shortage in the community.

Smith, G.S., Blum, D., Huttly, S.R., Okeke, N., Kirkwood, B.R. and Feachem, R.G. (1989), Disability from dracunculiasis: Effect on mobility. *Annals of Tropical Medicine and Parasitology*, **83** (2), 151-158.

Abstract: A study was conducted in northeastern Imo State to define the disability and restriction of mobility associated with dracunculiasis. The study was part of an evaluation of the UNICEF-assisted Drinking Water Supply and Sanitation Project in Imo State, Nigeria. A sample of household units (100 in year 1,195 in year 2) was visited every two weeks to determine who was affected by dracunculiasis and to characterize the extent of related disability. The average duration of symptoms was 12.7 weeks (range 3-29 weeks). Fifty eight per cent of all episodes of disease resulted in severe disability (with the individual unable to leave the compound) lasting a mean of 4.2 weeks (range 2-12). The mean period of severe disability was significantly higher for those aged 50 years and over than for those less than 50 years old. In the area studied, the disease occurred during the peak yam and rice harvest time and the period of preparation for the planting season. This is the first study to document systematically and prospectively the marked restriction of normal activity in affected individuals and the long duration of the disability. These findings can assist in improving estimates of the costs associated with dracunculiasis and of potential economic benefits if the disease were eradicated.

# Title: Annals of Vascular Surgery

Full Journal Title: [Annals of Vascular Surgery](http://www.springerlink.com/(crkruyynku24xg552nflzkmh)/app/home/journal.asp?referrer=backto&backto=linkingpublicationresults,1:100372,1;&absoluteposition=3#A3)

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Subject Categories:

: Impact Factor

? Klein, S. and Hage, J.J. (2006), Measurement, calculation, and normal range of the ankle-arm index: A bibliometric analysis and recommendation for standardization. *Annals of Vascular Surgery*, **20** (2), 282-292.

Full Text: [2006\Ann Vas Sur20, 282.pdf](2006/Ann%20Vas%20Sur20,%20282.pdf)

Abstract: Since its introduction in 1950, a variety of methods of measurement and calculation have been used to establish the ankle-arm index (AAI). This has resulted in variations of its normal range and difficulty in comparing study results. Hence, the objective of our study was to analyze the disparate methods used to assess AAI and its normal range and to recommend a standardized method to assess AAI based on that analysis. We made an inventory of the disparate AAI methods and its normal range reported in 100 randomly selected publications and recommend the means of such standardization. We recommend that an experienced observer assess AAI with the patient at rest in the supine position. The width of the sphygmometer cuffs should be 1.5 times that of the extremity to be measured, and brachial and crural pulses should be detected using a Doppler device. Systolic pressures should be measured at both arms and over the anterior and posterior arteries of both legs, with the cuff placed just proximally to the malleoli. The left arm pressure ought to be used as denominator and the mean of pressures of both crural arteries of each leg ought to be used for the numerator of the AAI for that leg. We advocate 0.90 as the cut-off value to distinguish patients who need further arterial assessment.

Keywords: Analysis, Arm, Assessment, Bibliometric Analysis, Blood-Pressure, Brachial Pressure Index, Coronary-Heart-Disease, Defined Population, Extremity, Follow-up, Index, Inventory, Leg, Lower-Extremities, Made, Measurement, Methods, Occlusive Disease, Patient, Patients, Peripheral Arterial-Disease, Position, Pressure, Publications, Range, Standardization, Systolic Pressures, Vascular-Disease

# Title: ANNEE Psychologique

Full Journal Title: ANNEE Psychologique

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ferrand, L. (1952), Hirsch’s h index: A new measure to quantify the research output of individual scientists. *ANNEE Psychologique*, **107** (4), 531-536.

Keywords: h Index, h-Index, Ranking, Research

# Title: 2008 41st Annual Hawaii International Conference on System Sciences

? Sunikka, A. and Bragge, J. (2008), What, who and where: insights into personalization. *2008 41st Annual Hawaii International Conference on System Sciences*, 2271-2280.

Abstract: Personalization is a phenomenon that intrigues and confuses. Personalized offerings promise customer attention, loyalty and safe haven against commoditization. However, these promises do not materialize unless customers accept personalization as a means to enhance their consuming experience. Three points of views are offered to personalization in this paper. An analysis of various personalization concepts shows that the basic concept of personalization is reaching maturity even though fresh views are added to it, e.g. context-based personalization. Secondly, a text-mining based approach profiles the personalization research based on bibliometric data on nearly 800 articles, and indicates that the research field is fairly fragmented, and that mass customization and customization research clearly diverges from personalization research. Based on a selection of articles, a further analysis classifies the type of research and research contexts that are the most common. Finally, this research also suggests a conceptualization of personalization.

Keywords: Analysis, Bibliometric, Research, Text Mining

# Title: The Annual International Conference on Contaminated Soils, Sediments and Water

Full Journal Title: The Annual International Conference on Contaminated Soils, Sediments and Water

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Tewari, N., Vasudevan, P. and Guha, B.K. (2004), Removal of Cr(VI) through biosorption by soil. *The Annual International Conference on Contaminated Soils, Sediments and Water*, Heavy Metals Poster Session.

Abstract: Industrial effluents are major sources of chromium pollution. Hazardous effects of Cr(VI) are well documented. Many removal technologies are present for chromium-laden effluents. Adsorption is widely used among them but high cost of adsorbents used, has led the focus on some cost effective alternative adsorbents. So keeping in view the cost and availability, Soil was used for the biosorption of Cr(VI) from aqueous solution. Biosorption equilibrium, kinetic and desorption was studied in a batch system. Equilibrium data fitted well to Langmuir isotherm model. The maximum sorption capacity of Soil was found to be 10.2 mg/g at an initial pH of 2.0 and 50oC temperature. Kinetics was studied under varying initial concentration of Cr(VI) and dose of soil. It was found that in both the cases biosorption followed pseudo-second order kinetics. The sorption was biphasic; the first phase was rapid followed by second slow phase. The equilibrium was achieved within two hours. For the recovery and reuse of metal desorption studies are important. In the present study desorption data showed that ~ 98% Cr(VI) could be desorbed using 0.1N NaOH. The biosorption cycle was found to be effective upto three sorption and desorption cycles. Soil may be used as a sorbent for Cr(VI) removal.

# Title: Annual Review of Energy and the Environment

Full Journal Title: Annual Review of Energy and the Environment

ISO Abbreviated Title: Annu. Rev. Energ. Environ.

JCR Abbreviated Title: Annu Rev Energ Env

ISSN: 1056-3466

Issues/Year: 1

Journal Country/Territory: United States

Language: English

Publisher: Annual Reviews Inc

Publisher Address: 4139 EL Camino Way, PO Box 10139, Palo Alto, CA 94303-0139

Subject Categories:

Energy & Fuels: Impact Factor

Engineering, Environmental: Impact Factor

# Title: Annual Review of Immunology

Full Journal Title: Annual Review of Immunology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0732-0582

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Rossi, D. and Zlotnik, A. (2000), The biology of chemokines and their receptors. *Annual Review of Immunology*, **18**, 217-243.

Abstract: During the last five years, the development of bioinformatics and EST databases has been primarily responsible for the identification of many new chemokines and chemokine receptors. The chemokine field has also received considerable attention since chemokine receptors were found to act as co-receptors for HIV infection (1). In addition, chemokines, along with adhesion molecules, are crucial during inflammatory responses for a timely recruitment of specific leukocyte subpopulations to sites of tissue damage. However, chemokines and their receptors are also important in dendritic cell maturation (2), B (3), and T (4) cell development, Th1 and Th2 responses, infections, angiogenesis, and tumor growth as well as metastasis (5). Furthermore, an increase in the number of chemokine/receptor transgenic and knock-out mice has helped to define the functions of chemokines in vivo. In this review we discuss some of the chemokines’ biological effects in vivo and in vitro, described in the last few years, and the implications of these findings when considering chemokine receptors as therapeutic targets.

Keywords: Chemokines, Inflammation, Trafficking, Metastasis, Angiogenesis, Protein-Coupled Receptor, Activation-Regulated Chemokine, Macrophage Inflammatory Protein-1-Alpha, Interferon-Inducible Protein-10, Chemoattractant I-Tac, Necrosis-Factor-Alpha, C-C Chemokine, Dendritic Cells, CXC Chemokine, T-Cells

# Title: Annual Review of Information Science and Technology

Full Journal Title: [Annual Review of Information Science and Technology](http://www3.interscience.wiley.com/cgi-bin/jhome/109861081)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0066-4200

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Narin, F. and Moll, J.K. (1977), Bibliometrics. *Annual Review of Information Science and Technology*, **12**, 35-58.

Full Text: Ann Rev Inf Sci Tec12, 35.pdf

Notes: highly cited

? White, H.D. and Mccain, K.W. (1989), Bibliometrics. *Annual Review of Information Science and Technology*, **24**, 119-186.

Full Text: 1989\Ann Rev Inf Sci Tec24, 119.pdf

Keywords: Bibliometrics

? Wilson, C.S. (1999), Informetrics. *Annual Review of Information Science and Technology*, **34**, 107-247.

Full Text: 1999\Ann Rev Inf Sci Tec34, 107.pdf

Keywords: Author Cocitation Analysis, Bradford Law, Information-Science, Lotka’s Law, Own-Language Preference, Simon-Yule Approach, Stationary Scientometric Distributions, Success-Breeds-Success, Theoretical Population-Genetics, World-Wide-Web

Notes: highly cited

? Borgman, C.L. and Furner, J. (2002), Scholarly communication and bibliometrics. *Annual Review of Information Science and Technology*, **36**, 3-72.

Full Text: [2002\Ann Rev Inf Sci Tec36, 3.pdf](2002/Ann%20Rev%20Inf%20Sci%20Tec36,%203.pdf)

Keywords: Bibliometrics, Communication

? Yang, K.D. (2005), Information retrieval on the Web. *Annual Review of Information Science and Technology*, **39**, 33-80.

Full Text: [2005\Ann Rev Inf Sci Tec39, 33.pdf](2005/Ann%20Rev%20Inf%20Sci%20Tec39,%2033.pdf)

Keywords: Bibliometrics, Classification, Composite Representations, Documents, Hypertext, Links, Queries, Subject

? Hyland, K. and Salager-Meyer, F. (2008), Scientific writing. *Annual Review of Information Science and Technology*, **42** (1), 297-338.

Full Text: [2008\Ann Rev Inf Sci Tec42, 297.pdf](2008/Ann%20Rev%20Inf%20Sci%20Tec42,%20297.pdf)

Keywords: 20th-Century, Academic Discourse, Collaboration, Construction, English, Metadiscourse, Reader, Research Articles, Self-Citations, Texts

? Bawden, D. and Robinson, L. (2011), Pharmaceutical information: A 30-year perspective on the literature. *Annual Review of Information Science and Technology*, **45**, 63-119.

Full Text: 2011\Ann Rev Inf Sci Tec45, 63.pdf

Keywords: Bibliometric Analysis, Consumer Health Information, Current-Awareness, Document Management-Systems, Drug-Information, In-House, Knowledge Management, Library-of-Medicine, Literature, Pharmaceutical, Regulatory Activities Meddra, Research-and-Development

? Bornmann, L. (2011), Scientific peer review. *Annual Review of Information Science and Technology*, **45**, 199-245.

Full Text: [2011\Ann Rev Inf Sci Tec45, 199.pdf](2011/Ann%20Rev%20Inf%20Sci%20Tec45,%20199.pdf)

Keywords: Advanced Bibliometric Methods, Angewandte-Chemie, Biomedical Publication, Citation Analysis, Fellowship Applications, Grant Applications, Inter-Referee Agreement, National-Science-Foundation, Predictive-Validity, Review, Statistical-Analysis

# Title: Annual Review of Medicine

Full Journal Title: Annual Review of Medicine

ISO Abbreviated Title: Annu. Rev. Med.

JCR Abbreviated Title: Annu Rev Med

ISSN: 0066-4219

Issues/Year: 1

Journal Country/Territory: United States

Language: English

Publisher: Annual Reviews Inc

Publisher Address: 4139 EL Camino Way, PO Box 10139, Palo Alto, CA 94303-0139

Subject Categories:

Medicine, General & Internal: Impact Factor

? Steiner, T.S., Thielman, N.M. and Guerrant, R.L. (1997), Protozoal agents: What are the dangers for the public water supply? *Annual Review of Medicine*, **48**, 329-340.

Abstract: Safe and efficient treatment of drinking water has been one of the major public health advances of the twentieth century. People in developed countries generally take for granted that their water is safe to drink, a luxury the majority of the world’s population does not have. The leading cause of infant mortality in the developing world is infectious diarrhea, and the prevalence of diarrheal pathogens is largely influenced by the quality and quantity of clean water available for drinking and washing. Until recently, modern water treatment had all but eliminated these concerns in developed nations. Over the past two decades, however, the safety of our water supply has been threatened by the emergence of *Cryptosporidium parvum*, a protozoal pathogen. The hearty oocysts of this organism survive chlorination and filtration to cause a diarrheal illness that, while unpleasant enough in healthy people, is devastating in immunocompromised individuals. The 1993 Milwaukee outbreak, in which 403,000 people developed diarrhea from drinking water that met all the updated federal safety standards, demonstrated the tremendous public health importance of this organism. While earlier attention had focused on *Giardia* and, A.M.ebic infections, the other “emerging” protozoan besides *Cryptosporidium* is Cyclospora. This review discusses the protozoal pathogens, including *Cryptosporidium parvum*, *Giardia lamblia*, Entamoeba histolytica, and Cyclospora cayetanensis, that cause waterborne diarrheal outbreaks and the threats they pose to the public.

Keywords: *Cryptosporidium*, *Giardia*, Cyclospora, Entamoeba, Waterborne Illness, Diarrhea, *Cryptosporidium*-Parvum Oocysts, Drinking-Water, Intestinal Pathogen, Foreign Residents, *Giardia* Cysts, Outbreak, Cyclospora, Diarrhea, Nepal, Contamination

# Title: Annual Review of Microbiology

Full Journal Title: [Annual Review of Microbiology](http://global.umi.com/pqdweb?TS=0&JSEnabled=1&RQT=317&SK=2&ScQ=000024718&TS=1030083940)

ISO Abbreviated Title: Annu. Rev. Microbiol.

JCR Abbreviated Title: Annu Rev Microbiol

ISSN: 0066-4227

Issues/Year: 1

Journal Country/Territory: United States

Language: English

Publisher: Annual Reviews

Publisher Address: 4139 EL Camino Way, PO Box 10139, Palo Alto, CA 94303-0139

Subject Categories:

Microbiology: Impact Factor 9.238, / (2000)

Notes: highly cited, TC >1000

? Monod, J. (1949), The growth of bacterial cultures. *Annual Review of Microbiology*, **3**, 371-394.

Full Text: [-1959\Ann Rev Mic3, 371.pdf](-1959/Ann%20Rev%20Mic3,%20371.pdf)

? Bulawa, C.E. (1993), Genetics and molecular-biology of chitin synthesis in fungi. *Annual Review of Microbiology*, **47**, 505-534.

Full Text: [-1959\Ann Rev Mic47, 505.pdf](-1959/Ann%20Rev%20Mic47,%20505.pdf)

Abstract: In Saccharomyces cerevisiae, three chitin synthases have been detected. Chitin synthases I and II, the products of the CHS1 and CHS2 genes, respectively, are closely related proteins that require partial proteolysis for activity in vitro. In contrast, chitin synthase III is active in vitro without protease treatment, and three genes, CSD2 (= CAL1), CSD4 (= CAL2), and CAL3, are required for its activity.

In the cell, the three enzymes have different functions. Chitin synthase I and II make only a small portion, <10%, of the cellular chitin. In acidic media, chitin synthase I is required for normal budding. Chitin synthase II is required for normal morphology, septation, and cell separation. Chitin synthase III is required for the synthesis of 90% of the cellular chitin, including the chitin in the bud scars and lateral wall. Mutants defective in chitin synthase III are resistant to Calcofluor and Kluyveromyces lactis killer toxin, they lack alkali-insoluble glucan, and under certain circumstances, they are temperature-sensitive for growth.

The available data suggest that many fungi have more than one chitin synthase and that these synthases are related to the S. cerevisiae CHS and CSD gene products.

Keywords: Cell Wall, Chitin Synthase, Septum, Yeast, Calcofluor, Cerevisiae Cell-Cycle, Saccharomyces-Cerevisiae, Schizosaccharomyces-Pombe, *Aspergillus*-Nidulans, Rhizobium-Meliloti, Candida-Albicans, Calcofluor White, S-Cerevisiae, Congo Red, Kluyveromyces-Lactis

Szewzyk, U., Szewzyk, R., Manz, W. and Schleifer, K.H. (2000), Microbiological safety of drinking water. *Annual Review of Microbiology*, **54** (1), 81-127.

Full Text: [A\Ann Rev Mic54, 81.pdf](A/Ann%20Rev%20Mic54,%2081.pdf)

Abstract: Emerging pathogens in drinking water have become increasingly important during the decade. These include newly-recognized pathogens from fecal sources such as *Cryptosporidium* parvum, *Campylobacter* spp., and rotavirus, as well as pathogens that are able to grow in water distribution systems, like *Legionella* spp., mycobacteria, and aeromonads, To perform a risk analysis for the pathogens in drinking water, it is necessary to understand the ecology of these organisms. The ecology of the drinking-water distribution system has to be evaluated in detail, especially the diversity and physiological properties of water bacteria. The interactions between water bacteria and (potential) pathogens in such diverse habitats as free water and biofilms are essential for the survival or growth of hygienically relevant organisms in drinking water. Results of epidemiological studies together with ecological data are the basis for effective resource protection, water treatment, and risk assessment.

Keywords: Water Bacteria, Parasites, Viruses, Emerging Pathogens, Biofilms, Risk Assessment, Microbial Ecology, *Pseudomonas-Aeruginosa* Biofilm, *Cryptosporidium*-Parvum Oocysts, 5-Cyano-2,3-Ditolyl Tetrazolium Chloride, Fluorescent Oligonucleotide Probes, Assimilable Organic-Carbon, In-Situ Identification, Non-Culturable Forms, *Legionella*-*Pneumophila*, *Escherichia*-Coli, Distribution-Systems

# Title: Annual Review of Nursing Research

Full Journal Title: Annual Review of Nursing Research

ISO Abbreviated Title:

JCR Abbreviated Title: Annu Rev Nurs Res

ISSN: 0739-6686

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Madigan, E.A., Tullai-McGuinness, S. and Neff, D.F. (2002), Home health services research. *Annual Review of Nursing Research*, **20**, 267-291.

Abstract: This chapter reviews 69 published research reports of home health care from a health services perspective by nurse researchers and researchers from other disciplines. Reports were identified through searches of the National Library of Medicine (MEDLINE), and the Cumulative Index to Nursing and Allied Health Literature and Social Sciences Citation Index using the following search terms: home health care, health services research, and elders. Within the major areas identified, the following additional terms were specified: resource use and outcomes. Reports were included if published between 1995 and 2001, used samples age 65 and older, performed in the U.S., and published in English. Studies of all types were included. The key findings follow: (a) Most studies were a theoretical. If a theoretical model was used, it was most often the Andersen Behavioral Model. (b) Few conclusions can be drawn about resource use--increasing age and higher severity of health related problems are associated with higher numbers of home visits. The variety of measures of resource use and the study approaches (large national data sets versus single or several agency samples) limits the ability to draw conclusions on resource use. (c) There is a growing body of evidence on rehospitalization of home health care patients which indicates rehospitalization is prevalent but largely not predictable. (d) Patient outcomes research is inconclusive at this point, primarily because there are few studies that examine patient outcomes using a consistent set of measures. The main recommendations are: to study rehospitalization using a more profile-based approach to determine visit patterns that may be effective, to further specify the kinds of outcomes that may be achieved as a result of home health care and which patients might be expected to achieve positive outcomes, and to examine the integration of home health care with the broader community-based services.

Keywords: Age, Approach, Care, Community Based, Data, Evidence, Health, Health Care, Health Services, Health Services Research, Home Visits, Integration, MEDLINE, Model, Outcomes, Outcomes Research, Patients, Positive Outcomes, Recommendations, Rehospitalization, Research, Resource Use, Reviews, Services

# Title: Annual Review of Nutrition

Full Journal Title: Annual Review of Nutrition

ISO Abbreviated Title: Annu. Rev. Nutr.

JCR Abbreviated Title: Annu Rev Nutr

ISSN: 0199-9885

Issues/Year: 1

Journal Country/Territory: United States

Language: English

Publisher: Annual Reviews Inc

Publisher Address: 4139 EL Camino Way, PO Box 10139, Palo Alto, CA 94303-0139

Subject Categories:

Nutrition & Dietetics: Impact Factor

? Shils, M.E. (1988), Magnesium in health and disease. *Annual Review of Nutrition*, **8**, 429-460.

? Gaitan, E. (1990), Goitrogens in food and water. *Annual Review of Nutrition*, **10**, 21-39.

Abstract: Epidemiologic and experimental evidence reviewed in this article emphasizes the complex and multifactorial etiology of endemic goiter. The important role of iodine deficiency as an etiologic factor in endemic goiter is firmly established, but there is evidence that other environmental factors can play an equally important role in the pathogenesis of this condition. Chemical categories, sources, and sites of action of the various classes of naturally occurring goitrogens and antithyroid agents are reviewed in this article. Evidence of the presence of these compounds in foodstuffs and drinking water is discussed. Bacterial contamination of water supplies also appears to be important in the development of goiter. Microorganisms appear to intervene in the biosynthesis and degradation of organic goitrogenic pollutants or may induce thyroid growth-promoting activity in the host, or both. Malnutrition and poor socioeconomic conditions, as for iodine deficiency, enhance the action of environmental goitrogens. Thus, a coordinated multidisciplinary approach is essential to solving this public health problem.

# Title: Annual Review of Public Health

Full Journal Title: [Annual Review of Public Health](http://global.umi.com/pqdweb?TS=0&JSEnabled=1&RQT=317&SK=2&ScQ=000017732&TS=1030084006)

ISO Abbreviated Title: Annu. Rev. Public Health

JCR Abbreviated Title: Annu Rev Publ Health

ISSN: 0163-7525

Issues/Year: 1

Journal Country/Territory: United States

Language: English

Publisher: Annual Reviews Inc

Publisher Address: 4139 EL Camino Way, PO Box 10139, Palo Alto, CA 94303-0139

Subject Categories:

Public, Environmental & Occupational Health: Impact Factor, 4.356, 1/85 (1999)

? Crump, K.S. and Guess, H.A. (1982), Drinking water and cancer: Review of recent epidemiological findings and assessment of risks. *Annual Review of Public Health*, **3**, 339-357.

? Rhoades, E.R., Brenneman, G., Lyle, J. and Handler, A. (1992), Mortality of American Indian and Alaska native infants. *Annu Rev Public Health*, **13**, 269-285.

Abstract: Accurate determination of infant mortality rates among Indians in seriously hampered by variations in the identification of Indian persons and use of different subsets of the Indian population for various purposes. Lack of consistency in the reporting of racial origin on birth and death records is a source of substantial error. Because of these factors, more than the usual care must attend comparisons and inferences drawn from data in which these differences are present. At present, it would seem prudent to regard all data about American Indians as provisional. Even though Indian infant mortality remains higher than that for US all races, regardless of techniques used for estimates, the decline of Indian infant mortality by more than 80% since the establishment of the IHS is a truly remarkable achievement. This success has been ascribed to a combination of activities, including the provision of safe drinking water, especially as an integral part of the IHS program; the nearly universal immunization of Indian children; and emphasis upon comprehensive, community-oriented programs focused on maternal and child care. These successes have contributed to changes in the distribution of the leading causes of Indian infant mortality, so that the most prominent causes now are SIDS, congenital anomalies, injuries, and various infections. Because of these changes and advances in knowledge, the IHS has recently revised its five-year plan for dealing with infant mortality to provide greater attention to injuries and infections and has embarked upon a series of discussions with the American Academy of Pediatrics to address postneonatal deaths and the difficult problem of SIDS. Low socioeconomic conditions, so important in influencing mortality rates (7, 14, 29), have thus far proved to be intractable. In the meantime, success will depend upon ensuring optimal prenatal care, reducing those risk factors amenable to correction, and solving the problem of SIDS.

? Raucher, R.S. (1996), Public health and regulatory considerations of the Safe Drinking Water Act. *Annual Review of Public Health*, **17**, 179-202.

Abstract: This paper provides an overview of the public health and economic issues associated with drinking water quality regulations in the United States. A historic perspective is provided by the use of filtration and chlorine disinfection, and of public health laws from the early 20th century up to passage of the Safe Drinking Water Act (SDWA), in 1974. The contaminants regulated under the Act, and the 1986 Amendments to the SDWA, are evaluated according to health endpoint, related issues in risk assessment, and the cost of complying with associated regulations. Risk-cost and benefit-cost analyses are offered for carcinogens, systemics, and pathogens. The paper describes the evolution of public health issues from the initial focus on waterborne infectious diseases to concerns over chemical contaminants, and the recent reemergence of microbials as the high-priority public health concern.

Keywords: Benefit-Cost, MCL, Cost-Effectiveness, Risk Assessment

Rose, J.B. (1997), Environmental ecology of *Cryptosporidium* and public health implications. *Annual Review of Public Health*, **18** (1), 135-161.

Full Text: [A\Ann Rev Pub Hea18, 135.pdf](A/Ann%20Rev%20Pub%20Hea18,%20135.pdf)

Abstract: *Cryptosporidium* has become the most important contaminant found in drinking water and is associated with a high risk of waterborne disease particularly for the immunocompromised. There have been 12 documented waterborne outbreaks in North America since 1985; in two of these (Milwaukee and Las Vegas) mortality rates in the immunocompromised ranged from 52% to 68%. The immunofluorescence antibody assay (IFA) using epifluorescence microscopy has been used to examine the occurrence of *Cryptosporidium* in sewage (1 to 120 oocysts/liter), filtered secondary treated wastewater (0.01 to 0.13 oocysts/liter), surface waters (0.001 to 107 oocysts/liter), groundwater (0.004 to 0.922 oocysts/liter) and treated drinking water (0.001 to 0.72 oocysts/liter). New rules are being developed (Information Collection Rule and Enhanced Surface Water Treatment Rule) to obtain more occurrence data for drinking water systems for use with new risk assessment models. Public health officials should consider a communication program to physicians treating the immunocompromised, nursing homes, develop a plan to evaluate cases of cryptosporidiosis in the community, and contribute to the development of public policies that limit contamination of source waters, improve water treatment, and protect public health.

Keywords: *Cryptosporidium*, enteric protozoa, oocyst survival, risk assessment, waterborne disease, Quantitative Risk Assessment, Parvum Oocysts, Drinking-Water, *Giardia* Cysts, Removing *Cryptosporidium*, Infected Patients, Chlorine Dioxide, Flow-Cytometry, United-States, River Water

Goldberg, B.W. (1998), Managed care and public health departments: Who is responsible for the health of the population? *Annual Review of Public Health*, **19** (1), 527-537.

Full Text: [A\Ann Rev Pub Hea19, 527.pdf](A/Ann%20Rev%20Pub%20Hea19,%20527.pdf)

Abstract: This review examines changes over the past decade in the delivery of health care in the United States, specifically the move toward managed care and capitation. Over 77 million Americans are now enrolled in health maintenance organizations, and the health care delivery system is reorganizing into large group practices and integrated health systems. Examined here are the implications of this shift on the interaction between managed care and public health agencies. How will a population-based system of health care be achieved in light of managed care organizations’ responsibility only far their enrolled population, in contrast to the responsibility of the public health service for the entire population? Where does the responsibility of MCOs end and that of public health begin? Should certain public health functions be absorbed by managed care organizations? What are the prospects for partnership between these two systems?

Keywords: Public Health Departments, Managed Care, Population-Based Medicine, Health Care Delivery Systems, Oriented Primary Care, Clinical-Practice, Medicaid, System

# Title: Anasthesiologie Intensivmedizin Notfallmedizin Schmerztherapie

Full Journal Title: Anasthesiologie Intensivmedizin Notfallmedizin Schmerztherapie

ISO Abbreviated Title: Anasthesiol. Intensivmed. Notfmed. Schmerzther.

JCR Abbreviated Title: Anasth Intensiv Notf

ISSN: 0939-2661

Issues/Year: 6

Journal Country/Territory: Germany

Language: Multi-Language

Publisher: Georg Thieme Verlag KG

Publisher Address: Rudigerstr 14, D-70469 Stuttgart, Germany

Subject Categories:

Anesthesiology: Impact Factor 0.408 /(2002)

Critical Care Medicine: Impact Factor 0.408 /(2002)

Kolbitsch, Ch., Balogh, D., Hauffe, H., Lockinger, A. and Benzer, A. (1999), National publication output in medical research. *Anasthesiologie Intensivmedizin Notfallmedizin Schmerztherapie*, **34** (4), 214-217.

Abstract: Objective: Both the total number of publications and the number of publications in high-ranking journals determine a country’s reputation in scientific research. A predominance of national authors in a country’s international high-ranking journals has occasionally been presumed. We therefore analysed the publication output of various countries and the proportion of national authors in international high-ranking journals. Methods: The database EMBASE(R) (Excerpta Medical by means of the online service Dialog(R) was used to analyse the national publication output of various countries during the years 1986 to 1990 and 1991 to 1995 and the proportion of national authors in The Lancet and The New England journal of Medicine (NEJM.). Results: American and British publications played the leading roles in the total number of medical publications from 1986 to 1990 (35.6 % and 8.8 %, respectively) and also from 1991 to 1995 (34.3 % and 9.1 %, respectively). A more detailed analysis revealed an unexpectedly high national publication output (publications per million inhabitants) of smaller countries, which exceeded that of larger nations during both periods studied (national publication output 1986-90 vs. 1991-95: Israel: (3386 vs. 3447), Sweden: (3303 vs. 3620), Switzerland: (2930 vs. 3722), Denmark: (2884 vs. 3167), UK: (2186 vs. 2825), USA: (2042 vs. 2388)). Furthermore, the proportion of national authors during both periods (1986-90 vs. 1991-95) studied was 41.8% vs. 34.1 % in the case of The Lancet and 77.9 % vs. 69.5 % in the case of The New England journal of Medicine. Conclusions: The present study found an unexpectedly high national publication output of smaller countries as well as a clearly disproportionate number of published articles from national authors in The Lancet and the NEJM during the years 1986 to 1990 and 1991 to 1995.

Keywords: Publication Frequency, Publication Output, National Publication Bias, Bias

# Title: Anthrozoos

Full Journal Title: Anthrozoos

ISO Abbreviated Title: Anthrozoos

JCR Abbreviated Title: Anthrozoos

ISSN: 0892-7936

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Delta Society

Publisher Address: 289 Perimeter Road East, Renton, WA 98055-1329

Subject Categories:

Veterinary Sciences: Impact Factor 0.039, / (2000)

? Zasloff, R.L. and Hart, L.A. (1998), Attitudes and care practices of cat caretakers in Hawaii. *Anthrozoos*, **11** (4), 242-248.

Abstract: Individuals who were maintaining colonies of homeless, free-roaming cats on the island of Oahu were surveyed to learn about the attitudes and care practices associated with colony maintenance. The 75 respondents were primarily female pet owners, middle-aged living with spouses, well-educated, and employed full time, dispelling the image of caretakers as elderly, socially-iso lated individuals. Most of the them believed that outdoor cat colonies should continue to exist and that colony maintenance is a way of curbing pet overpopulation so long as the cats are sterilized. The majority of respondents had been maintaining cat colonies for two to four years. All caretakers reported having attempted to socialize the cats and nearly half had been successful in adopting out cats. Most were caring for one colony consisting of fewer than 10 animals which were fed once or twice daily. All caretakers were making efforts to frap the cats and take them for sterilization and veterinary care. Although many took advantage of the Hawaiian Humane Society’s free sterilization program for colony cats, some caretakers paid out-of-pocket for sterilization and more than half reported paying for all veterinary care. Love of cats, opportunity for nurturing, and enhanced feelings of self-esteem appear to be some of the factors underlying the remarkable commitment of the caretakers. Colony management may not be practical in some areas due to risks to wildlife and human health. However; where feasible, the availability of individuals willing to provide ongoing, responsible care to these animals may be a significant resource for animal welfare and control organizations.

Keywords: Feral Cats

# Title: Anti-Cancer Drugs

Full Journal Title: Anti-Cancer Drugs

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? Wang, L.D., Chen, X.M., Li, W. and Sheng, Z.X. (2012), Antiepidermal growth factor receptor monoclonal antibody improves survival outcomes in the treatment of patients with metastatic colorectal cancer. *Anti-Cancer Drugs*, **23** (2), 155-160.

Full Text: [2012\Ant-Can Dru23, 155.pdf](2012/Ant-Can%20Dru23,%20155.pdf)

Abstract: The aim of this study was to determine whether or not the addition of anti-epidermal growth factor receptor (anti-EGFR) monoclonal antibody (mAb) to standard chemotherapy or best supportive care (BSC), compared with chemotherapy or BSC alone, can improve overall survival (OS) and progression-free survival (PFS) in patients with metastatic colorectal cancer (mCRC), and evaluate the influence of KRAS mutant status on the efficacy of anti-EGFR mAb. Medline, Embase, the Cochrane controlled trials register, and the Science Citation Index were searched. Nine trials were identified, covering a total of 7941 patients. The treatment of mCRC with a combination of anti-EGFR mAb and chemotherapy or BSC, as compared with chemotherapy or BSC alone, improved the OS [hazard ratio (HR), 0.90 (0.84-0.96); P = 0.002]. The benefit of anti-EGFR mAb in patients with KRAS wild-type tumors was apparent in relation to a marginal trend toward improved OS [HR, 0.84 (0.70-1.01); P = 0.06], and significantly improved PFS [HR, 0.64 (0.51-0.81); P < 0.001]. No benefit for the addition of anti-EGFR mAb was detected for any efficacy end-point in patients with KRAS mutant tumors. The summary HRs (anti-EGFR mAb vs control) were 0.98 (0.88-1.08) (P = 0.71) for OS and 1.08 (0.94-1.25) (P = 0.27) for PFS, respectively. In conclusion, this analysis provides confirmation that, compared with chemotherapy or BSC alone, anti-EGFR mAb with chemotherapy or BSC reduces the risk of progression and death of mCRC and that this benefit is seen only in patients with wild-type KRAS tumors. Anti-Cancer Drugs 23: 155-160 (C) 2012 Wolters Kluwer Health | Lippincott Williams & Wilkins.

Keywords: 1st-Line Treatment, Analysis, Anti-Epidermal Growth Factor Receptor Monoclonal Body, Best Supportive Care, Bsc, Cancer, Care, Cetuximab Plus Irinotecan, Chemotherapy, Citation, Cochrane, Colorectal Cancer, Control, Drugs, Efficacy, Fluorouracil, Growth, Health, Leucovorin, Medline, Metaanalysis, Outcomes, Overall Survival, Oxaliplatin, Panitumumab, Patients, Phase-III Trial, Progression, Ratio, Risk, Science, Science Citation Index, Statistics, Survival, Treatment, Trend

# Title: Anti-Corrosion Methods and Materials

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Subject Categories:

: Impact Factor

? Latha, G. and Rajeswari, S. (1996), Evaluation of non-ionic surfactants as corrosion inhibitors in seawater. *Anti-Corrosion Methods and Materials*, **43** (5), 19-22.

Full Text: [1996\Ant-Cor Met Mat43, 19.pdf](1996/Ant-Cor%20Met%20Mat43,%2019.pdf)

Abstract: Corrosion control in cooling systems where seawater forms the coolant is primarily effected with inhibitor additions. Deals with the evaluation of non-ionic surfactants as corrosion inhibitors in seawater, on conventionally used type 316L SS. Potentiodynamic anodic cyclic polarization studies were carried out to evaluate the performance of non-ionic surfactants. Emphasizes the role of these compounds as effective inhibitors focusing on the chemical behaviour and nature of chemisorption, influencing the inhibiting properties.

Keywords: Corrosion, Energy Industry, Metals

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Subject Categories:

Oncology: Impact Factor 1.447, 76/114 (2002)

? Guille, E. and Apelgot, S. (1990), Treatment of mice bearing a krebs ascitic tumor by means of a protocol based on radioactive copper (Cu-64). 4. Consequences of the nature of cancer-tumor-resistant mice. *Anticancer Research*, **10** (1), 133-138.

Takeda, S., Horrobin, D.F., Manku, M., Sim, P.G., Ells, G. and Simmons, V. (1992), Lipid peroxidation in human breast cancer cells in response to gamma-linolenic acid and iron. *Anticancer Research*, **12** (2), 329-333.

Abstract: Lipid peroxidation in human breast cancer (ZR-75-1) cells and cancer cell killing were confirmed by using ultraviolet (UV)-spectrophotometry and mass spectrometry (MS). ZR-75-1 cells and hman normal fibroblast CCD-41-SK (41Sk) cells were cultured with gamma-linolenic acid (GLA) and ferrous iron Fe(II) combinations. Formation of lipid peroxide and cytotoxic effect were highest in ZR-75-1 cells treated with GLA + Fe(II), though 41 Sk cells showed little evidence of either lipid peroxidation or cytotoxity. These results indicate a cancer-cell-specific lipid peroxidation mechanism in association with the selective cancer cell killing effect in response to GLA.

Keywords: Unsaturated Fatty-Acids, Lipid Peroxides, Conjugated Diene, Gamma-Linolenic Acid (GLA) Ultraviolet Spectrometry (UV), Gas Chromatography Mass Spectrometry (GC-MS), Human Breast Cancer Cells (ZR-75-1), Cancer Cell Killing Effect

? The, B.H., Lin, J.T., Pan, W.H., Lin, S.H., Wang, L.Y., Lee, T.K. and Chen, C.J. (1994), Seroprevalence and associated risk-factors of helicobacter-pylori infection in Taiwan. *Anticancer Research*, **14** (3B), 1389-1392.

Abstract: In order to estimate the seroprevalence and explore multiple risk factors associated with Helicobacter pylori infection among residents in Taiwan, a fetal of 823 subjects randomly selected from one metropolitan precinct and three townships were studied. Serum samples were tested for IgG antibodies against H. pylori by enzyme-linked immunosorbent assay using commercial kits. The overall seropositive rate was 54.4% with no gender difference (53.7% for males and 55.2% for females). There war a significant geographical variation with the highest seropositive rate (63.4%) in rural area where aborigines live, and where the age-adjusted stomach cancer mortality is highest and the lowest (40.5%) in urban area where Hakkas live, and where the stomach cancer mortality is lowest. There was also an increasing seropositive rate with age from 27.1% for children younger than 10 years old to 72.3% for adults aged more than 40 years bid. Age-specific seroprevalence in Taiwan is higher than that in United States, France, Finland and Australia, and lower than that in Algeria, Ivory Coast and India. No association With H. pylori seropositivity was observed for drinking water source, toilet type, family income and educational level after adjusting for age and area. A dose-response relation between H. pylori seropositivity and sibship size was found. Upon further analysis of seroprevalence for children aged 16 or younger, a positive association was observed for birth order and current number of children in family; there was also an inverse association for current number of adults in family. The early childhood transmission among siblings seems an important determinant of H. pylori seropositivity in Taiwan.

Keywords: Helicobacter Pylori, Seroprevalence, Risk Factors, Peptic-Ulcer Disease, Gastric-Cancer, Age, Epidemiology

Kurbacher, C.M., Nagel, W., Mallmann, P., Kurbacher, J.A., Sass, G., Hubner, H., Andreotti, P.E. and Krebs, D. (1994), *In vitro* activity of titanocenedichloride in human renal cell carcinoma compared to conventional antineoplastic agents. *Anticancer Research*, **14** (4A), 1529-1533.

Abstract: In the present study, the in vitro, activity of titanocenedichloride, a novel anticancer metal complex, in eleven primary renal cell carcinoma (RCC) specimens was evaluated by an adenosine triphosphate (ATP) bioluminescence assay. Compared to standard antineoplastic agents such as cisplatin, doxorubicin, mitoxantrone and vinblastine, titanocenedichloride was found to exhibit higher cytotoxicity. Four tumors showed strong sensitivity to the new, agent Three of them were resistant to conventional cytostatics. These findings indicated a lack of cross-resistance between titanocenedichloride and both natural compounds as well as platin analogues. Since mitoxantrone was also found to exhibit marked antineoplastic activity with no evidence of cross-resistance to titanocenedichloride, the combination of both drugs in RCC should be evaluated further with additional in vitro studies.

Keywords: Adenosine Triphosphate (ATP), Bioluminescence, Chemosensitivity, Cisplatin, Doxorubicin, Mitoxantrone, Renal Cell Carcinoma, Titanocenedichloride, Vinblastine, Multidrug-Resistance, Drug Accumulation, Cancer, Mitoxantrone, Mechanisms, Tumors, Line

Kurbacher, C.M., Mallmann, P., Kurbacher, J.A., Sass, G., Andreotti, P.E., Rahmun, A., Hubner, H. and Krebs, D. (1994), *In vitro* activity of titanocenedichloride *versus* cisplatin and doxorubicin in primary and recurrent epithelial ovarian cancer. *Anticancer Research*, **14** (5A), 1961-1965.

Abstract: Background: Titanocenedichloride (MKT 4) is a new antineoplastic metal complex with proven activity in several experimental tumors. Material and Methods: In the present study, the cytotoxic activity of titanocenedichloride in fourteen primary and twelve recurrent ovarian carcinomas (OvCA) was evaluated by an in vitro adenosine triphosphate (ATP) bioluminescence assay. Results: In primary tumors, MKT 4 was found to be at least as effective as cisplatin (DDP) and doxorubicin (DOX). In samples derived from pretreated patients, titanocenedichloride was even more active. In both groups of tumors, a lack of cross resistance between the two metal compounds as well as between MKT 4 and DOX was apparent. The new agent was found to be active in eight of seventeen DDP-resistant (primaries: n = 4; recurrences n = 4) and also eight of seventeen DOX-resistant tumors (primaries: n = 4; recurrences n = 4). Conclusions: These results indicate a remarkable in vitro activity of titanocenedichloride in native OvCA specimens, even in those exhibiting resistance against cisplatin or doxorubicin. The putative role of this novel drug for the future therapy of OvCA should be evaluated by additional in vitro and in vivo studies.

Keywords: Adenosine Triphosphate (ATP), Bioluminescence, Chemoresistance, Chemosensitivity, Cisplatin, Doxorubicin, Ovarian Carcinoma, Titanocenedichloride, Cell-Lines, Acquired-Resistance, Platinum, Cis-Diamminedichloroplatinum(II), Cytotoxicity, Glutathione, Therapy, Invitro, Repair, Agents

Sumitani, K., Kamijo, R. and Nagumo, M. (1997), Cytotoxic effect of sodium nitroprusside on cancer cells: Involvement of apoptosis and suppression of *C-MYC* and *C-MYB* proto-oncogene expression. *Anticancer Research*, **17** (2A), 865-871.

Abstract: Nitric oxide (NO) is an unstable free radical gas known as an effector molecule of macrophage cytotoxicity against cancer cells Although several mechanisms of NO-mediated cytotoxicity have been proposed, this phenomenon remains to be characterized in detail. To explore the mechanisms by which NO kills cancer cells, we made use of sodium nitroprusside (SNP), which releases NO in the culture medium. SNP showed a dose-dependent cytotoxic effect on NA cells, an epithelial cancer cell line. When NA cells were killed by SNP, high levels of NO2-(stable end product of NO) were detected in the culture medium. The cell death induced by SNP was mediated by apoptosis, as demonstrated by the presence of nuclear condensation and blebbing of the nuclear membrane and intrernucleosomal DNA fragmentation quantified by a specific ELISA. Northern blot analysis revealed that *c-myc* mRNA expression of NA cells was rapidly reduced by treatment with SNP. RT-PCR analysis showed that *c-myb* mRNA was expressed in untreated NA cells, and *c-myb* mRNA level of NA cells was dose-dependently reduced by treatment with SNP. These results indicate that SNP exerts its cytotoxic effect on NA cells through spontaneous release of NO. Cytotoxicity induced by SNP is at least partially mediated via the process known as apoptosis. our results also suggest that down-regulation of *c-myb* and *c-myb* proto-oncogenes might be involved in SNP-induced cytotoxicity.

Keywords: Sodium Nitroprusside, Cancer Cells, Cytotoxicity, Apoptosis, Proto-Oncogene

Massidda, B., Fenu, M., AIonta, M.T., Tronci, M., Foddi, M.R., Montaldo, C. and Montaldo, P.L. (1997), Early detection of the anthracycline-induced cardiotoxicity: A non-invasive hemodynamic study. *Anticancer Research*, **17** (1B), 663-668.

Abstract: Anthracyclines are the most frequent cause of iatrogenic congestive heart failure ranging from acute reversible minor, irreversible reduction in the left ventricular ejection fraction and death despite preventive measures. Sensitive methods are needed to detect earliest preclinical cardiotoxicity abong with the development of new protective agents. Thirty breast cancer patients were randomly treated with q 21 120 mg/m2 Epirubicin (EPI)×3, alone (10 patients), or + ICRF-187 (1000 mg/m2) (10 patients) or + C (0)Q (10) (60 mg/day) (10 patients) and monitored by Thoracic Electrical Bioimpedance (TEB) cardiography before (T-0) and at the end of chemotherapy (T-1), then at 1, 3, 6 months of follow up (F-1, F-2, F-3). a) The group treated with EPI alone showed, between F-1-F-2, a significant (p < 0.05) decrease in Stroke Index (SI), Acceleration Index (ACI) and a significant (p < 0.05) increase in Systemic Vascular Resistance Index (SVRI), while between F-2 and F-3 it showed a significant (p < 0.05) recovery in SI and ACI. b) The group treated with EPI + ICRF-187 showed, between F-1 and F-2 a significant decrease in SI and ACI (p < 0.05, p < 0.01 respectively) and a significant (p < 0.05) increase in SVRI; between F-2-F-3 ACI had a significant (p < 0.05) recovery; c) The group treated with EPI + C (1)Q (10) showed no modification in SI, ACI, and SVRI during the study. The ejection Fraction (EF) remained unchanged during the study in all the groups. C (1)Q (10) seems to prevent early decreased in cardiac performance and contractiling, thus avoiding an SVRI increase, while ICRF-187 did not. Since ICRF-187 acts by binding iron, we deem that the earliest cardiac involvement, may occur before iron overload; therefore the role of ICRF-187 and C (1)Q (10) in acute or chronic heart toxicity was correlated with high-dose anthracycline and needs to be further investigated.

Keywords: Anthracyclines, Cardiotoxicity, Hemodynamic Study, Doxorubicin, Adriamycin, Bioimpedance, Damage, Heart

Carrara, M., Berti, T., D’Ancona, S., Cherchi, V. and Sindellari, L. (1997), *In vitro* effect of Pt and Pd mercaptopyridine complexes. *Anticancer Research*, **17** (2A), 975-980.

Abstract: In previous research we studied the cytotoxic effect of new Pt mercaptopyridine (MP) complexes on several tumoral cell lines (F10, Fohn, LoVo and HeLa) as well as on the fibroblast cell line (3T3). The more interesting Pt compounds are compared here to Pd mercaptopyridine analogs, in order to evaluate the metals influence on activity. Earlier, the complexes C/2 = [Pt (MP) (3)Cl]Cl; C/5 = [Pt (MP) (3)Br]Br; C/8 = [Pd (MP) (3)Cl]Cl and C/11 = [Pd (MP) (3)Br]Br and cis-DDP as reference were tested on 3T3 and LoVo cells, by Sauter’s multiwells technique and neutral red uptake. The results obtained using lysosomal neutral red uptake to confirm those by the Sauter’s multiwells technique, showing that C/2 and C/11 are the most active complexes. In particular, C/2 shows a significantly higher cytotoxic activity than cis-DDP on LoVo cells, and equivalent on 3T3. C/5 complex also induces an interesting cell growth reduction, but only on LoVo, while C/8 is completely inactive on all cell lines. Because the major limitation to the successful treatment of platinum-based chemotherapeutic regimens is the emergence of drug resistance, the activity of the four complexes on cis-DDP sensitive (M5076) and cis-DDP resistant cancer cells (M5/DDPc) has been tested. The data reported in this work make devident that the presence of ligands with sulfur donor atoms may be of particular importance in confirming the antitumor properties of Pt complexes. In fact, Pt mercaptopyridine C/2 is also more active than cis-DDP against cells made resistant to cis-DDP. Moreover, the results obtained with Pd complex C/11, especially on LoVo cells, showed that this metal could be considered interesting in the design of potential new antitumor drugs.

Keywords: Cis-Ddp, Pt and Pd Mercaptopyridine Complexes, Cytotoxic Effect, Drug Resistance, Platinum(II) Halide-Complexes, Cyto-Toxicity Assays, Palladium(II), Esters, Growth

? Limouris, G.S., Shukla, S.K., Manetou, A., Kouvaris, I., Plataniotis, G., Triantafyllou, N., Rigas, A.V. and Vlahos, L. (1997), Rhenium-186-HEDP palliative treatment in disseminated bone metastases due to prostate-cancer. *Anticancer Research*, **17** (3B), 1699-1704.

Abstract: Prostate carcinoma is the most commonly associated with osseous metastases malignancy in males. The lesions, being usually of a mixed sclerotic/lytic variety and less often of the pure sclerotic type need to be treated by a bone seeking radioactive element with an as low as possible radiobiological burden on the surrounding (peritumoral) tissues. Rhenium-186-HEDP was used to treat these osseous metastatic lesions due to its bone seeking kinetics attractive radiochemical properties. of a total of 16 prostate cancel patients, 3 experiment loss of pain, 8 experienced obvious and 2 some improvement. Na change was observed by 3 patients. Ten patients manifested a flare syndrome increasing pain approximately 2 to 6 days, after Re-186-HEDP i.v. application. Six patients showed a definite and 9 a slight decrease in platelet levels and absolute number of polymorphonuclear white blood cells, up to fourth week following treatment. One patient underwent a whale blood transfusion and in 2 peripheral neuropathy was observed lasting about 9 to 12 days. Re-186-HEDP appears to be a promising new metal ion complex for the palliation of painful bone metastases in prostate cancer. Compared to Sr-89 therapy, it shows a longer analgetic efficacy and has the advantage of emitting gamma rays, a fact which facilitates dosimetric calculations.

Keywords: Rhenium-186-HEDP, Bone Metastases, Prostate Cancer, Radionuclide Therapy, Management, SR-89

Shukla, S.K., Limouris, G.S., Cusumano, R., Acconcia, A., Cipriani, C., Argiro, G., Atzei, G. and Boemi, S. (1997), Renal cell carcinoma detection and systemic therapy with tumor-affine gallium-67 and with yttrium-90 citrate solutions. *Anticancer Research*, **17** (3B), 1713-1718.

Abstract: Background. There have been no major advances in the systemic detection of renal cell carcinoma (RCC) and its unpredictable metastases. Surgery, thus, remains the mainstay of the curative treatment for the localized disease. The purpose of the present study has been to systemically detect and tr eat advanced RCC respectively with Ga-67 and Y-90 radio-pharmaceuticals containing tumour-affine species. Patients and methods. Thirty-three RCC patients were imaged with Tc-99m-MDP and then with Ga-67 citrate solution in order to detect RCC and its metastases. Yttrium-90 citrate solution, containing the radionuclide species chromatographically and electrophoretically idential to those in RCC-affine Ga-67 solution, was administered i.v; for systemic therapy of advanced RCC. Total-body distribution of Y-90 was studied with a gamma-camera equipped with an ultra-high-sensitivity collimator. The efficacy of the therapy was studied by the clinical condition of the patient and by the total-body scintigraphic imaging with Tc-99m-MDP and with Ga-67 citrate solution. Results. Ga-67 detects RCC bone metastases better than Tc-99m-MDP. Systemic therapy of RCC metastasized to bones, king and brain was obtained with RCC-affine Y-90 citrate solution. Conclusions. Third group metal radionuclides, Ga-67 and Y-90, detect and treat advanced RCC.

Keywords: Renal Cell Carcinoma, Metastases, Diagnosis, Therapy, Technetium-99m-MDP, Ga-67 Citrate, Y-90 Citrate, Cancer, Metastasis, Surgery

? Denardo, S.J., Richman, C.M., Goldstein, D.S., Shen, S., Salako, Q., Kukis, D.L., Meares, C.F., Yuan, A., Welborn, J.L. and Denardo, G. (1997), Lttrium-90/indium-111-dota-peptide-chimeric L6-pharmacokinetics, dosimetry and initial results in patients with incurable breast-cancer. *Anticancer Research*, **17** (3B), 1735-1744.

Abstract: Background: Radioimmunotherapy (RIT) using I-131-Chimeric L6 (ChL6) antibody has shown therapeutic promise for patients with breast cancer. To enhance this potential a novel immunoconjugate was developed that targets adenocarcinomas like breast cancer and tightly binds yttrium-90 (Y-90) for therapy and indium-111 (In-111) for imaging. The radioimmunoconjugate consists of a macrocyclic chelator (DOTA) linked to ChL6 by a catabolizable peptide. Y-90-DOTA-peptide-ChL6 was designed to minimize the radiation dose to critical normal tissues, thereby improving the therapeutic index. Materials and Methods: Three patients with incur able metastatic breast cancer received Y-90/In-111-DOTA-peptide-ChL6 for 5 pharmacokinetics/dosimetry studies and one of these patients also received 2 therapy doses. Quantitative imaging of in vitro assay of Y-90 and In-111 in blood, urine and bone marrow samples were obtained. Results: Y-90/In-111-DOTA-peptide-ChL6 was prepared at high purity and was stable in vivo. Assays of bone marrow revealed no evidence for escape of Y-90 or In-111 from the chelate. In imaging of tumors was excellent, providing a therapeutic index for tumor to marrow radiation as high as 229 to 1. Y-90 and In-111 provided comparable pharmacokinetics, as did tracer and therapeutic doses of radioimmuno-conjugates. One patient that received 2 therapeutic doses of Y-90-DOTA-peptide-ChL6 showed regression of tumors and tumor markers. Toxicities were relatively minor and no anti-globulin response developed despite 5 immunoconjugate infusions. Conclusions: This first study in patients of radioimmunoconjugates with a catabolizable linker between the metal chelator and the antibody confirmed that these novel Y-90/In-111-DOTA-peptide-ChL6 radioimmunoconjugates have significant potential. Tracer doses of In-111-DOTA-peptide-ChL6 for imaging predicted the behavior of therapeutic doses of Y-90-DOTA-peptide-ChLd The latter radioimmunoconjugate induced regression of tumors and tumor markers without significant toxicity. When compared to earlier I-131-ChL6 dosimetry, Y-90-DOTA-peptide-ChL6 provided a therapeutic index several times better.

Keywords: Breast Cancer, Antibody, Immunoconjugate, Metabolizable Linker, Radiotherapy, Radioimmunotherapy, Monoclonal-Antibodies, Biodistribution, Peptide, Tumor, Mice, Radioimmunotherapy, Stability, Digestion, Clearance, Linkages

Knapp, Jr., F.F., Beets, A.L., Guhlke, S., Zamora, P.O., Bender, H., Palmedo, H. and Biersack, H.J. (1997), Availability of Rhenium-188 from the alumina-based tungsten-188/rhenium-188 generator for preparation of rhenium-188-labeled radiopharmaceuticals for cancer treatment. *Anticancer Research*, **17**, 1783-1795.

Abstract: Rhenium-188 (β- = 2.2 MeV; gamma- = 155 keV; T-1/2 16.9 hours) is an attractive therapeutic radioisotope which is produced from decay of the reactor produced tungsten-188 parent (T1/2 69 days) and thus conveniently obtained on demand by elution fi om the alumina-based tungsten-188 /rhenium-188 generator system. The rhenium-188 is obtained as sodium perrhenate by elution of the generator with 0.9% saline. The post elution use of disposable tandem, ion-exchange columns is a simple method for the concentration of rhenium-188 saline solutions with specific volumes > 500 mCi/ml. This method can also extend the useful shelf-life of the generator, which can be as long as one year. The long useful shelf-life of the generator is expected to provide rhenium-188 at very reasonable costs for routine preparation of a variety of radiopharmaceuticals for the treatment of a variety of cancers, including breast cancer. We are evaluating two types of Re-188-labeled agents under investigation which have potential for the treatment of breast cancer. Rhenium-188-labeled hydroxyethylidenedophosphonate (HEDP) and Re-188-dimercaptosuccinic acid (DMSA) are being applied for palliative treatment of pain associated with skeletal metastases, and the Re-188-RC-160 somatostatin analogue [cyclic NH2-(D)-Phe-Cys-Try-(D)-Trp-Lys-Val-Cys-Trp-NH2] for somatostatin-receptor-positive tumors. The results of initial clinical studies with the two bone pain agents demonstrate good targeting to skeletal metastases, and use of Re-188-HEDP has resulted in. pain palliation with minimal bone marrow suppression in the initial patient studies. While these initial studies have been conducted in patients with prostate cancer; similar results are expected in planned studies in breast cancer patients. In animal studies, Re-188-RC-160 has been successfully used for the local/regional treatment of experimental breast cancer and other cancers. Re-188-RC-160 binds to somatostatin-receptor-positive cells both in vitro and in vivo, including breast cancer cells (ZR-75-1 breast carcinoma and NCI-H69 human small cell ling carcinoma), but not to binding-negative cells (Raji, Burkitt’s lymphoma). A structurally similar Re-188-cyclic peptide with different binding specificity (CTOP [cyclic NH2-(D)-Phe-Cys-Try-(D)-Trp-Orn-Thr-Pen-Thr-ol]; art opiate-receptor antagonost) did not bind to target cells. Both gentisic acid and ascorbic acid are present in the Re-188-HEDP and Re-188-RC-160 formulations and have been found to also significantly reduce radiolytic degradation of the somatostatin peptide analogues, and may have general application in the stabilization of Re-188-labled radiopharmaceuticals.

Keywords: Rhenium-188, Radiopharmaceuticals, Cancer Treatment, Rhenium-188

? Gkiozos, I., Charpidou, A. and Syrigos, K. (2007), Developments in the treatment of non-small cell lung cancer. *Anticancer Research*, **27** (4C), 2823-2827.

Abstract: Lung cancer remains the leading cause of cancer-related deaths among men and women in the civilized world. Although there have been major improvements over the recent decades in surgical techniques and the role of chemotherapy-radiotherapy in the treatment of non-small cell lung cancer (NSCLC), the long-term outlook for these patients has not changed significantly. The median survival for patients with advanced-stage NSCLC treated with platinum-based chemotherapy is a disappointing 8-10 months. In current clinical practice, chemotherapy is used as a combined modality with radiotherapy as an adjuvant or neoadjuvant therapy. Moreover, combination chemotherapy is regarded as the standard care in the treatment of unresectable locally advanced (stage IIIb), metastatic (stage IV), or recurrent disease. The recent developments in the treatment of NSCLC have been focused on the emerging role of adjuvant therapy in the early stages of NSCLC. The clinical activity of pemetrexed, a multi-targeted antifolate anticancer agent, as a second-line chemotherapy agent and the impact of new biological agents, such as bevacizumab and erlotinib, have been investigated in phase III trials in the first- and second-line setting. Even though these options have been available in the last few years, there is a clear need for improvement in the current standard of care. No definite survival benefit has yet been demonstrated. An abundant amount of research is still required in the field of lung cancer therapy with well-designed clinical trials and appropriate patient selection.

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? Rastogi, N. and Goh, K.S. (1991), Invitro Activity of the New Difluorinated Quinolone Sparfloxacin (At-4140) Against *Mycobacterium tuberculosis* Compared with Activities of Ofloxacin and Ciprofloxacin. *Antimicrobial Agents and Chemotherapy*, **35** (9), 1933-1936.

Full Text: [1991\Ant Age Che35, 1933.pdf](1991/Ant%20Age%20Che35,%201933.pdf)

Abstract: MICs of the new fluoroquinolone drugs ofloxacin, ciprofloxacin, and sparfloxacin (AT-4140) for 10 strains of *Mycobacterium tuberculosis* were determined by using both a BACTEC radiometric method and testing on solid 7H11 agar medium. Radiometric MICs by 7H12 broth testing ranged from 0.5 to 1.0, 0.25 to 0.5, and 0.1 to 0.2-mu-g, ml for ofloxacin, ciprofloxacin, and sparfloxacin respectively, whereas MICs in solid medium ranged from 0.5 to 1.0, 0.5 to 1.0, and 0.2 to 0.5-mu-g, ml, respectively. The bactericidal action of the quinolones compared with their reported peak concentrations in human serum showed that sparfloxacin is the most bactericidal, followed by ciprofloxacin and ofloxacin. Our results suggest that potential of the new difluorinated quinolone sparfloxacin for use against the tubercle bacillus and indicate that further determination of its antimycobacterial spectrum and intracellular efficacy may be fruitful

Keywords: Agents, Antimycobacterial, At-4140, Avium Complex, Bactericidal Activity, Drug Susceptibility, Enhancement, Intracellular, *Mycobacterium tuberculosis*, Ofloxacin, Quinolones, Radiometric Method, Sparfloxacin, Tuberculosis

? Rastogi, N., Labrousse, V., Goh, K.S. and Desousa, J.P.C. (1991), Antimycobacterial Spectrum of Sparfloxacin and Its Activities Alone and in Association with Other Drugs Against Mycobacterium-Avium Complex Growing Extracellularly and Intracellularly in Murine and Human Macrophages. *Antimicrobial Agents and Chemotherapy*, **35** (12), 2473-2480.

Full Text: [1991\Ant Age Che35, 2473.pdf](1991/Ant%20Age%20Che35,%202473.pdf)

Abstract: The MICs and MBCs of the new difluorinated quinolone drug sparfloxacin against type strains belonging to 21 species of mycobacteria were screened. The MICs and MBCs were within the range of 0.1 to 2.0 and 0.1 to 4.0-mu-g, ml, respectively (with an MBC, MIC ratio of 1 to 2), and against 18 of the 21 species tested, the drug showed significant bactericidal activity (at least 99% killing or more of the initial inoculum added) at concentrations well within the reported peak concentrations in serum (C(max)) in humans. MICs of sparfloxacin for 7 of 10 *Mycobacterium avium* complex strains were below the C(max), with MBC, MIC ratios within the range of 2 to 4. Enhancement of its activity by ethambutol, rifampin, amikacin, and clarithromycin (which were used at sublethal concentrations) assessed by using BACTEC radiometry revealed that its activity was further enhanced in 2 of 10 strains by rifampin and in 7 of 10 strains by ethambutol. The bactericidal effects of various drugs used alone as well as two-drug combinations used at C(max) levels were also screened against four strains of M. avium complex growing intracellularly in two different macrophage systems, namely, mouse bone marrow-derived macrophages and peripheral blood monocyte-derived human macrophages. Our results showed a satisfactory correlation between the extracellular and intracellular drug activity data

Keywords: 5 Fluoroquinolones, Agents, Envelope, Ethambutol, Inhibition, Intracellular, Invitro, Macrophage Cell-Line, Macrophages, Pharmacokinetics, Sparfloxacin, Susceptibility, Tuberculosis, Wall

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Full Text: [1993\Ant Age Che37, 407.pdf](1993/Ant%20Age%20Che37,%20407.pdf)

Abstract: The bactericidal activities of various monotherapies and combined regimens were compared in mice at different stages after infection with *Mycobacterium tuberculosis*. These therapies mimicked the initial and continuation phases of chemotherapy for human tuberculosis. As monotherapy, the bactericidal activity of sparfloxacin (SPFX) was dose related; the activity of SPFX at 100 mg, kg of body weight was comparable to that of rifampin (RMP) and was significantly greater than those of isoniazid (INH), pyrazinamide (PZA), or ofloxacin (OFLO) during both the initial and continuation phases of chemotherapy. During the initial phase, the addition of SPFX did not enhance or diminish the activities of the combinations INH-RMP-PZA or RMP-PZA; the combinations SPFX-PZA-streptomycin (SM) and SPFX-PZA-kanamycin (KANA) displayed powerful bactericidal activity. Because the area under the plasma concentration-time curve of SPFX (100 mg, kg) in mice is similar to that of SPFX (400 mg) in humans, the promising bactericidal activity displayed by SPFX in mice might be achieved in humans by administration of the drug in a clinically tolerated dosage. In addition, the combinations SPFX-PZA-SM and SPFX-PZA-KANA may be useful for the treatment of multidrug-resistant tuberculosis

Keywords: Agents, Control Programmes, Drug Sensitivity, Invitro, Mice, *Mycobacterium tuberculosis*, Ofloxacin, Pyrazinamide, Quinolone, Sensitivity Tests, Sparfloxacin, Tuberculosis

? Tomioka, H., Saito, H. and Sato, K. (1993), Comparative Antimycobacterial Activities of the Newly Synthesized Quinolone Am-1155, Sparfloxacin, and Ofloxacin. *Antimicrobial Agents and Chemotherapy*, **37** (6), 1259-1263.

Full Text: [1993\Ant Age Che37, 1259.pdf](1993/Ant%20Age%20Che37,%201259.pdf)

Abstract: AM-1155 is a newly synthesized 6-fluoro-8-methoxy quinolone. We assessed its in vitro antimycobacterial activity using sparfloxacin (SPFX) and ofloxacin (OFLX) as comparison drugs, The MICs of these agents for various mycobacterial strains were determined by the agar dilution method with 7H11 medium. AM- 1155 had lower MICs for 50 and 90% of tested strains of Mycobacterium kansasii, M. marinum, and M. fortuitum-M. chelonae complex than SPFX and OFLX, and the values for M. tuberculosis, M. scrofulaceum, and the M. avium-M. intracellulare complex were similar to those of SPFX and considerably lower than those of OFLX. In addition, the antimicrobial activity of AM-1155 against M. tuberculosis and M. intracellulare phagocytosed into murine peritoneal macrophages was compared with that of OFLX. AM-1155 (1 μg, ml) inhibited the intracellular growth of both M. tuberculosis and M. intracellulare, whereas OFLX at the same concentration failed to show any such effect. Moreover, AM-1155 (10 μg, ml) exhibited a steady bactericidal action against M. tuberculosis, whereas OFLX at the same concentration had only a weak effect. AM-1155 (10 μg, ml) also inhibited the growth of M. intracellulare more effectively than OFLX

Keywords: Agents, Am-1155, Antimycobacterial, Ciprofloxacin, Comparison, Complex, Fluoroquinolones, Intracellular, Invitro Activity, Macrophages, Mycobacterium-Fortuitum, Ofloxacin, Pefloxacin, Pharmacokinetics, Sparfloxacin, Tissue Penetration, Tuberculosis

? Klemens, S.P., Destefano, M.S. and Cynamon, M.H. (1993), Therapy of Multidrug-Resistant Tuberculosis - Lessons from Studies with Mice. *Antimicrobial Agents and Chemotherapy*, **37** (11), 2344-2347.

Full Text: [1993\Ant Age Che37, 2344.pdf](1993/Ant%20Age%20Che37,%202344.pdf)

Abstract: The activities of antituberculosis agents were evaluated in a murine tuberculosis model using a drug-resistant isolate. A multidrug-resistant clinical isolate from a recent outbreak of tuberculosis in the New York State correctional system was used for infection. Approximately 10(7) viable *Mycobacterium tuberculosis* ATCC 49967 (strain CNL) organisms were given intravenously to 4-week-old female outbred mice. Treatment was started 1 day after infection and given for 4 weeks. Spleens and lungs were homogenized, and viable cell counts were determined. Statistical analysis indicated that ethionamide, sparfloxacin, ofloxacin, capreomycin, clarithromycin, and clofazimine are active in the murine test system with this multidrug-resistant tuberculosis isolate. Sparfloxacin is the most active quinolone. Despite in vitro resistance, isoniazid has moderate activity. In vitro susceptibility data coupled with evaluation of agents against drug-resistant isolates in the murine system should provide information necessary to design clinical trials for treatment of infections with these organisms

Keywords: Agents, Bacilli, Hiv- Infection, Human-Immunodeficiency-Virus, Invitro, Mice, *Mycobacterium tuberculosis*, *Mycobacterium tuberculosis*, Ofloxacin, Resistance, Sparfloxacin, Tuberculosis

? Mehta, R.T., Keyhani, A., Mcqueen, T.J., Rosenbaum, B., Rolston, K.V. and Tarrand, J.J. (1993), In-Vitro Activities of Free and Liposomal Drugs Against *Mycobacterium avium*-M-Intracellulare Complex and Mycobacterium- Tuberculosis. *Antimicrobial Agents and Chemotherapy*, **37** (12), 2584-2587.

Full Text: [1993\Ant Age Che37, 2584.pdf](1993/Ant%20Age%20Che37,%202584.pdf)

Abstract: We compared MICs and MBCs of various free- and liposome- incorporated antimicrobial agents against several patient isolates of *Mycobacterium avium*-M. intracellulare complex and certain American Type Culture Collection strains of M. avium, M. intracellulare, and *Mycobacterium tuberculosis*. Seven of 19 agents were selected for incorporation into liposomes. The MICs of these agents for 50 and 90% of isolates tested (MIC(50)s and MIC(90)s, respectively) ranged from 0.5 to 62 μg, ml. Members of the M. avium-M. intracellulare complex were resistant to killing by most of the other agents tested in the free form. However, clofazimine, resorcinomycin A, and PD 117558 showed complete killing of bacteria at concentrations ranging from 8 to 31 μg, ml, represented as MBC(90)s. Among the liposome- incorporated agents, clofazimine anti resorcinomycin A had the highest killing effects (MBC(90)s, 8 and 16 μg, ml, respectively). Furthermore, both free and liposome-incorporated clofazimine had equivalent growth-inhibitory and killing effects on all American Type Culture Collection strains of M. avium, M. intracellulare, and M. tuberculosis tested. These results show that the antibacterial activities of certain drugs, particularly those of clofazimine and resorcinomycin, were maintained after the drugs were incorporated into liposomes

Keywords: Acquired Immunodeficiency Syndrome, Agents, Antifungal Efficacy, Antimicrobial Agents, Cancer- Patients, Clofazimine, Infections, Invitro Activity, *Mycobacterium tuberculosis*, Quinolone, Susceptibility, Toxicity, Tuberculosis

? Takiff, H.E., Salazar, L., Guerrero, C., Philipp, W., Huang, W.M., Kreiswirth, B., Cole, S.T., Jacobs, W.R. and Telenti, A. (1994), Cloning and Nucleotide-Sequence of *Mycobacterium tuberculosis* Gyra and Gyrb Genes and Detection of Quinolone Resistance Mutations. *Antimicrobial Agents and Chemotherapy*, **38** (4), 773-780.

Full Text: [1994\Ant Age Che38, 773.pdf](1994/Ant%20Age%20Che38,%20773.pdf)

Abstract: The emergence of multidrug-resistant strains of *Mycobacterium tuberculosis* has resulted in increased interest in the fluoroquinolones (FQs) as antituberculosis agents. To investigate the frequency and mechanisms of FQ resistance in M. tuberculosis, we cloned and sequenced the wild-type gyrA and gyrB genes, which encode the A and B subunits of the DNA gyrase, respectively; DNA gyrase is the main target of the FQs. On the basis of the sequence information, we performed DNA amplification for sequencing and single-strand conformation polymorphism analysis to examine the presumed quinolone resistance regions of gyrA and gyrB from reference strains (n = 4) and clinical isolates (n = 55). Mutations in codons of gyrA analogous to those described in other FQ-resistant bacteria were identified in all isolates (n = 14) for which the ciprofloxacin MIC was >2 μg, ml. In addition, we selected ciprofloxacin-resistant mutants of Mycobacterium bovis BCG and M. tuberculosis Erdman and H37ra. Spontaneously resistant mutants developed at a frequency of 1 in 107 to 108 at ciprofloxacin concentrations of 2 μg, ml, but no primary resistant colonies were selected at higher ciprofloxacin concentrations. Replating of those first-step mutants selected for mutants with high levels of resistance which harbored gyrA mutations similar to those found among clinical FQ-resistant isolates. The gyrA and gyrB sequence information will facilitate analysis of the mechanisms of resistance to drugs which target the gyrase and the implementation of rapid strategies for the estimation of FQ susceptibility in clinical M. tuberculosis isolates

Keywords: Agents, Bcg, Chromosome, Ciprofloxacin, Determining Region, Dna Gyrase, Escherichia-Coli, Fluoroquinolones, Gyrase, Invitro Selection, Methicillin-Resistant, *Mycobacterium tuberculosis*, Norfloxacin, Polymerase Chain-Reaction, Resistance, Staphylococcus-Aureus, Tuberculosis

? Saito, H., Tomioka, H., Sato, K. and Dekio, S. (1994), In-Vitro and In-Vivo Antimycobacterial Activities of A New Quinolone, Du-6859A. *Antimicrobial Agents and Chemotherapy*, **38** (12), 2877-2882.

Full Text: [1994\Ant Age Che38, 2877.pdf](1994/Ant%20Age%20Che38,%202877.pdf)

Abstract: A new fluoroquinolone, DU-6859a, was studied for its in vitro and in vivo antimycobacterial activities. MIC determination by the agar dilution method with 7H11 medium revealed that DU- 6859a had MICs at which 90% of M. kansasii (0.78 μg, ml), M. marinum (1.56 μg, ml), M. scrofulaceum (1.56 μg, ml), M. fortuitum (0.39 μg, ml), M. chelonae subsp. abscessus (6.25 μg, ml), and M. chelonae subsp. chelonae (1.56 μg, ml) were inhibited were 4 to 32 times lower than those of ofloxacin and sparfloxacin. The MICs of DU-6859a at which 90% of M. tuberculosis (0.2 μg, ml) and M. avium-M. intracellulare complex (12.5 μg, ml each) were inhibited were comparable to those of sparfloxacin but were four- to eightfold lower than those of ofloxacin. Thus, DU-6859a possessed more potent in vitro activity than sparfloxacin and ofloxacin against most mycobacterial species. DU-6859a exerted significant efficacy against infections caused by M. intracellulare and M. chelonae subsp. abscessus induced in mice when it was given at a dose of 1 mg per mouse (ca. 50 mg, kg of body weight) in terms of reducing the frequency of occurrence and the degree of gross pulmonary or renal lesions and bacterial loads in the lungs, spleens, or kidneys. The efficacy of DU-6859a was greater than that of ofloxacin and was more pronounced against M. chelonae infections than against M. intracellulare infections

Keywords: Acquired-Immunodeficiency- Syndrome, Agents, AIDS Patients, Antimycobacterial, Ciprofloxacin, Ethambutol, In Vitro Activity, Invitro, Mice, Mycobacterium-Avium Complex, Ofloxacin, Phagocyte Functions, Sparfloxacin, Substance Ofloxacin Dl8280, Tuberculosis, Virus-Infection

Alangaden, G.J., Manavathu, E.K., Vakulenko, S.B., Zvonok, N.M. and Lerner, S.A. (1995), Characterization of Fluoroquinolone-Resistant mutant strains of *Mycobacterium tuberculosis* selected in the laboratory and isolated from patients. *Antimicrobial Agents and Chemotherapy*, **39** (8), 1700-1703.

Full Text: [1995\Ant Age Che39, 1700.pdf](1995/Ant%20Age%20Che39,%201700.pdf)

Abstract: To examine the mechanism of resistance to fluoroquinolones in *Mycobacterium tuberculosis*, we selected spontaneous fluoroquinolone-resistant mutants from a susceptible strain, H37Rv, and studied the susceptibilities of these mutants and two fluoroquinolone-resistant clinical isolates (A-382, A-564) to various fluoroquinolones and to isoniazid and rifampin. Furthermore, since mutations within the quinolone resistance- determining region of the structural gene encoding the A subunit of DNA gyrase are the most common mechanism of acquired resistance, we amplified this region by PCR and compared the nucleotide sequences of the fluoroquinolone-resistant strains with that of the susceptible strain. Fluoroquinolone-resistant mutants of H37Rv appeared at frequencies of 2×10-6 to 1×10-8, For three mutants selected on ciprofloxacin, ofloxacin, and sparfloxacin, respectively, and the two clinical isolates, MICs of ciprofloxacin and ofloxacin were as high as 16 μg, ml, and those of sparfloxacin were 3 to 8 μg, ml. They displayed cross-resistance to all fluoroquinolones tested but not to isoniazid or rifampin, Sparfloxacin and FQ-A (PD 127391-0002) were the most potent fluoroquinolones. All of the fluoroquinolone-resistant strains (MICs, greater than or equal to 4 μg, ml) had mutations in the quinolone resistance- determining region which led to substitution of the Asp residue at position 87 (Asp-87) by Asn or Ala or the substitution of Ala-83 by Val in the A subunit of DNA gyrase. Similar mutations have been noted in other bacterial species and recently in mycobacteria. The broad resistance to fluoroquinolones that arose readily by point mutation in the laboratory and apparently during inadequate therapy, as was the case in the clinical isolates, may ultimately lead to serious restriction of the use of these drugs in the treatment of tuberculosis

Keywords: Agents, Ciprofloxacin, DNA Gyrase, Escherichia-Coli, Fluoroquinolones, Gene, Gyrase, Mutations, *Mycobacterium tuberculosis*, Ofloxacin, Polymerase Chain-Reaction, Pulmonary Tuberculosis, Resistance, Sparfloxacin, Sparfloxacin AT-4140, Staphylococcus-Aureus, Substance Ofloxacin Dl8280, Tuberculosis

Guillemin, I., Cambau, E. and Jarlier, V. (1995), Sequences of conserved region in the a subunit of DNA gyrase from 9 species of the genus mycobacterium - phylogenetic analysis and implication for intrinsic susceptibility to quinolones. *Antimicrobial Agents and Chemotherapy*, **39** (9), 2145-2149.

Full Text: [1995\Ant Age Che39, 2145.pdf](1995/Ant%20Age%20Che39,%202145.pdf)

Abstract: The sequences of a conserved region in the A subunit of DNA gyrase corresponding to the quinolone resistance-determining region were determined for nine mycobacterial species and were compared. Although the nucleotide sequences were highly conserved, they clearly differentiated one species from another. The results of the phylogenetic analysis based on the sequences of the quinolone resistance-determining regions were compared with those provided by the 16S rRNA sequences. Deduced amino acid sequences were identical within the nine species except for amino acid 83, which was frequently involved in acquired resistance to quinolones in many genera, including mycobacteria, The presence at position 83 of an alanine for seven mycobacterial species (M. tuberculosis, M. bovis BCG, M. leprae, M. avium, M. kansasii, M. chelonae, and M. smegmatis) and of a serine for the two remaining mycobacterial species (M. tuberculosis and M. aurum) correlated well with the MICs of ofloxacin for both groups of species, suggesting the role of this residue in intrinsic susceptibility to quinolones in mycobacteria

Keywords: A-Protein, Agents, Bcg, Ciprofloxacin, Cloning, DNA Gyrase, Escherichia-Coli, Gyrase, Nucleotide-Sequence, Ofloxacin, Quinolones, Resistance, Resistance Mutations, Single, Staphylococcus-Aureus, Tuberculosis

Kocagöz, T., Hackbarth, C.J., Ünsal, I., Rosenberg, E.Y., Nikaido, H. and Chambers, H.F. (1996), Gyrase mutations in laboratory-selected, fluoroquinolone- resistant mutants of *Mycobacterium tuberculosis* H37Ra. *Antimicrobial Agents and Chemotherapy*, **40** (8), 1768-1774.

Full Text: [1996\Ant Age Che40, 1768.pdf](1996/Ant%20Age%20Che40,%201768.pdf)

Abstract: To characterize mechanisms of resistance to fluoroquinolones by *Mycobacterium tuberculosis*, mutants of strain H37Ra were selected in vitro with ofloxacin. Their quinolone resistance- determining regions of gyrA and gyrB were amplified and sequenced to identify mutations in gyrase A or B, Three types of mutants were obtained: (i) one mutant (TKp1) had no mutations in gyrA or gyrB; (II) mutants that had single missense mutations in gyrA, and (III) mutants that had two missense mutations resulting in either two altered gyrase A residues or an altered residue in both gyrases A and B, The TKp1 mutant had slightly reduced levels of uptake of [C- 14]norfloxacin, which was associated with two- to fourfold increases in the MICs of ofloxacin, ciprofloxacin, and sparfloxacin. Gyrase mutations caused a much greater increase in the MICs of fluoroquinolones, For mutants with single gyrA mutations, the increases in the MICs were 4 to 16-fold, and for mutants with double gyrase mutations, the MICs were increased 32-fold or more compared with those for the parent. A gyrA mutation in TKp1 secondary mutants was associated with 32- to 128-fold increases in the MICs of ofloxacin and ciprofloxacin compared with the MICs for H37Ra and an eight-fold increase in the MIC of sparfloxacin. Sparfloxacin was the most active fluoroquinolone tested, No sparfloxacin-resistant single-step mutants were selected at concentrations of >2.5 μg, ml, and high-level resistance (i.e., MIC, greater than or equal to 5 μg, ml) was associated with two gyrase mutations. Mutations in gyrB and possibly altered levels of intracellular accumulation of drug are two additional mechanisms that may be used by M. tuberculosis in the development of fluoroquinolone resistance, Because sparfloxacin is more active in vitro and selection of resistance appears to be less likely to occur, it may have important advantages over ofloxacin or ciprofloxacin for the treatment of tuberculosis

Keywords: Active Efflux, Agents, Dna Gyrase, Escherichia-Coli, Fluoroquinolones, Gyrase, Minimal Inhibitory Concentrations, *Mycobacterium tuberculosis*, Nucleotide-Sequence, Ofloxacin, Outer-Membrane, Polymerase Chain-Reaction, Pseudomonas-Aeruginosa, Quinolone Resistance, Resistance, Sparfloxacin, Staphylococcus-Aureus, Tuberculosis

Revel-Viravau, V., Truong, Q.C., Moreau, N., Jarlier, V. and Sougakoff, W. (1996), Sequence analysis, purification, and study of inhibition by 4- quinolones of the DNA gyrase from *Mycobacterium smegmatis*. *Antimicrobial Agents and Chemotherapy*, **40** (9), 2054-2061.

Full Text: [1996\Ant Age Che40, 2054.pdf](1996/Ant%20Age%20Che40,%202054.pdf)

Abstract: We determined the nucleotide sequence of a 6-kb DNA region harboring the recF, orf192, gyrB, and gyrA genes from *Mycobacterium smegmatis* mc(2)155, The amino acid sequences deduced from gyrA and gyrB displayed 89 and 86% identity, respectively, with the DNA gyrase from *Mycobacterium tuberculosis*, and 67 and 65% identity, respectively, with that from Streptomyces coelicolor. An open reading frame encoding the C-terminal region of the M. smegmatis RecF polypeptide was found upstream from gyrB and was 57% identical to the open reading frame encoding the C-terminal region of the S, coelicolor RecF protein, The gene orf192 was identified between recF and gyrB and was 39% identical to orf191 found in S, coelicolor in the recF-gyrB region, The M. smegmatis DNA gyrase, which was purified by affinity chromatography on novobiocin-Sepharose, consisted of two polypeptides with apparent molecular masses of 98 and 80 kDa, Determination of the N-terminal amino acid sequence of the B subunit confirmed GTG as the start codon in gyrB. Analysis of the supercoiling activity of the enzyme indicated that the ill, smegmatis DNA gyrase was characterized by a specific activity equivalent to that of the Escherichia coli DNA gyrase. Inhibition of this activity by 4-quinolones was investigated by determining the 50% inhibitory concentrations (IC(50)s) of nalidixic acid, ofloxacin, and ciprofloxacin, The results indicated that the inhibitory activities of these drugs against the M, smegmatis DNA gyrase were markedly lower than those previously reported for the E, coli DNA gyrase. The results also suggested that the higher levels of activity of ofloxacin and ciprofloxacin against ill. smegmatis (MICs, 0.5 to 1 μg, ml), in contrast to that of nalidixic acid (MIG, 256 μg, ml), could be related to the higher inhibitory activities of fluoroquinolones against the DNA gyrase from this species (IC(50)s, 7 to 14 μg, ml) compared with that of nalidixic acid(IC50, 1,400 μg, ml)

Keywords: Agents, Bacillus-Subtilis, Coli Gyrb-Gene, Determining Region, Dna Gyrase, Escherichia- Coli, Fluoroquinolones, Gyrase, *Mycobacterium tuberculosis*, Neisseria-Gonorrhoeae, Nucleotide-Sequence, Ofloxacin, Pseudomonas-Putida, Quinolone Resistance Mutations, Quinolones, Staphylococcus- Aureus, Streptomyces-Sphaeroides, Tuberculosis

Renau, T.E., Gage, J.W., Dever, J.A., Roland, G.E., Joannides, E.T., Shapiro, M.A., Sanchez, J.P., Gracheck, S.J., Domagala, J.M., Jacobs, M.R. and Reynolds, R.C. (1996), Structure-activity relationships of quinolone agents against mycobacteria: Effect of structural modifications at the 8 position. *Antimicrobial Agents and Chemotherapy*, **40** (10), 2363-2368.

Full Text: [1996\Ant Age Che40, 2363.pdf](1996/Ant%20Age%20Che40,%202363.pdf)

Abstract: A series of quinolones with substitutions at the 8 position has been prepared as part of a study to examine the relationship between structural modifications at this position and activity against mycobacteria, The compounds were prepared by procedures described in the literature and were evaluated for their activities against Mycobacterium fortuitum and *Mycobacterium smegmatis*. The activities of the compounds against these two organisms were used as a measure of *Mycobacterium tuberculosis* activity, The results demonstrate that the contribution of the 8 position to antimycobacterial activity was dependent on the substituent at N-1 and was in the order (i) COMe approximate to CBr > CCl > CH approximate to CF approximate to COEt > N > CCF3 when N-1 was cyclopropyl; (II) N approximate to CH > CF > COMe when N-1 was 2,4-difluorophenyl; (III) N greater than or equal to CH when N-1 was tert-butyl; and (IV) N > CH when N-1 was ethyl, In general, derivatives with piperazine substitutions at C-7 were slightly less active against mycobacteria than the analogs with pyrrolidine substitutions, regardless of the pattern of substitution at the 8 position, Several of the best compounds were evaluated for their potential side effects as well as their activities against Mycobacterium aurum, *Mycobacterium avium*-M. intracellulare, and M. tuberculosis. These agents exhibited biological profiles similar to or better than those of the positive controls ciprofloxacin and sparfloxacin

Keywords: Agents, Am-1155, Antibacterial Agents, Derivatives, Drug-Resistant Tuberculosis, Fluoronaphthyridines, Fluoroquinolones, *Mycobacterium tuberculosis*, N-1, Pyridonecarboxylic Acids, Quinolones, Side-Effect Relationships, Sparfloxacin, Tuberculosis

Guillemin, I., Jarlier, V. and Cambau, E. (1998), Correlation between quinolone susceptibility patterns and sequences in the A and B subunits of DNA gyrase in mycobacteria. *Antimicrobial Agents and Chemotherapy*, **42** (8), 2084-2088.

Full Text: [1998\Ant Age Che42, 2048.pdf](1998/Ant%20Age%20Che42,%202048.pdf)

Abstract: The in vitro activities of seven quinolones and the sequences of the quinolone resistance determining regions (QRDR) in the A and B subunits of DNA gyrase were determined for 14 mycobacterial species, On the basis of quinolone activity, quinolones were arranged from that with the greatest to that with the least activity as follows: sparfloxacin, levofloxacin, ciprofloxacin, ofloxacin, pefloxacin, flumequine, and nalidixic acid. Based on MICs, the species could be organized into three groups: resistant (*Mycobacterium avium*, M. intracellulare, M. marinum, M. chelonae, M. abscessus [ofloxacin MICs, greater than or equal to 8 μg, ml]), moderately susceptible (M. tuberculosis, M. bovis BCG, M. kansasii, M. leprae, M. fortuitum third biovariant, M. smegmatis [ofloxacin MICs, 0.5 to 1 μg, ml]), and susceptible (M. fortuitum, M. peregrinum, M. aurum [ofloxacin MICs, less than or equal to 0.25 μg, ml]). Peptide sequences of the QRDR of GyrB were identical in all the species, including the amino acids at the three positions known to be involved in acquired resistance to quinolone, i.e,, 426 (Asp), 447 (Arg), and 464 (Asn) (numbering system used for Escherichia coli), The last two residues could be involved in the overall low level of susceptibility of mycobacteria to quinolones since they differ from those found in the very susceptible E. coli (Lys-447 and Ser-464) but are identical to those found in the less susceptible Staphylococcus aureus and *Streptococcus pneumoniae*. Peptide sequences of the QRDR of GyrA were identical in all the species, except for the amino acid at position 83, which was an alanine in the two less susceptible groups and a serine in the most susceptible one, as in E. coli, suggesting that this amino acid is involved in the observed differences of quinolone susceptibility within the Mycobacterium genus

Keywords: Ciprofloxacin, Escherichia-Coli, Fluoroquinolones, Gyrase, Gyrb Genes, Levofloxacin, Mutations, Neisseria- Gonorrhoeae, Ofloxacin, Quinolones, Resistance, Resistance-Determining Region, Smegmatis, Sparfloxacin, Tuberculosis

Oleksijew, A., Meulbroek, J., Ewing, P., Jarvis, K., Mitten, M., Paige, L., Tovcimak, A., Nukkula, M., Chu, D. and Alder, J.D. (1998), In vivo efficacy of ABT-255 against drug-sensitive and - resistant *Mycobacterium tuberculosis* strains. *Antimicrobial Agents and Chemotherapy*, **42** (10), 2674-2677.

Full Text: [1998\Ant Age Che42, 2674.pdf](1998/Ant%20Age%20Che42,%202674.pdf)

Abstract: Current therapy for pulmonary tuberculosis involves 6 months of treatment with isoniazid, pyrazinamide, rifampin, and ethambutol or streptomycin for reliable treatment efficacy. The long treatment period increases the probability of noncompliance, leading to the generation of multidrug-resistant isolates of *Mycobacterium tuberculosis*. A treatment option that significantly shortened the course of therapy, or a new class of antibacterial effective against drug-resistant M. tuberculosis would be of value, ABT-255 is a novel 2-pyridone antibacterial agent which demonstrates in vitro potency and in vivo efficacy against drug-susceptible and drug-resistant M. tuberculosis strains. By the Alamar blue reduction technique, the MIC of ABT-255 against susceptible strains of M. tuberculosis ranged from 0.016 to 0.031 μg, ml, The MIC of ABT-255 against rifampin- or ethambutol-resistant nl. tuberculosis isolates was 0.031 μg, ml, In a murine model of pulmonary tuberculosis, 4 weeks of oral ABT-255 therapy produced a 2- to 5-log(10) reduction in viable drug-susceptible Rt tuberculosis counts from lung tissue. Against drug-resistant strains of RI. tuberculosis. ABT-255 produced a 2- to 3-log(10) reduction in viable bacterial counts from lung tissue. ABT-255 is a promising new antibacterial agent with activity against M. tuberculosis

Keywords: 2-Pyridones, Abt-719, Antibacterial Agents, Fluoroquinolone, In-Vitro, Levofloxacin, *Mycobacterium tuberculosis*, Quinolone, Tuberculosis

Zhao, B.Y., Pine, R., Domagala, J. and Drlica, K. (1999), Fluoroquinolone action against clinical isolates of *Mycobacterium tuberculosis*: Effects of a C-8 methoxyl group on survival in liquid media and in human macrophages. *Antimicrobial Agents and Chemotherapy*, **43** (3), 661-666.

Full Text: [1999\Ant Age Che43, 661.pdf](1999/Ant%20Age%20Che43,%20661.pdf)

Abstract: When the lethal action of a C-8 methoxyl fluoroqninolone against clinical isolates of *Mycobacterium tuberculosis* in liquid medium was measured, the compound was found to be three to four times more effective (as determined by measuring the 90% lethal dose) than a C-8-H control fluoroquinolone or ciprofloxacin against cells having a wild-type gyrA (gyrase) gene. Against ciprofloxacin-resistant strains, the C-8 methoxyl group enhanced lethality when alanine was replaced by valine at position 90 of the GyrA protein or when aspartic acid 94 was replaced by glycine, histidine, or tyrosine. During infection of a human macrophage model by wild-type Mycobacterium bovis BCG, the C-8 methoxyl group lowered survival 20- to 100-fold compared with the same concentration of a C-8-H fluoroquinolone. The C-8 methoxyl fluoroquinolone was also more effective than ciprofloxacin against a gyrA Asn94 mutant of M. bovis BCG. In an M. tuberculosis-macrophage system the C-8 methoxyl group improved fluoroquinolone action against both quinolone-susceptible and quinolone-resistant clinical isolates. Thus, a C-8 methoxyl group enhances the bactericidal activity of quinolones with N1-cyclopropyl substitutions; these data encourage further refinement of fluoroquinolones as antituberculosis agents

Keywords: Bactericidal Activity, DNA Gyrase, Emergence, Escherichia-Coli, Fluoroquinolones, Gyrase, Human Polymorphonuclear Leukocytes, Macrophages, Mutations, *Mycobacterium tuberculosis*, New-York-City, Ofloxacin, Quinolones, Resistant Tuberculosis, Topoisomerase- Iv, Tuberculosis

Takahata, M., Mitsuyama, J., Yamashiro, Y., Yonezawa, M., Araki, H., Todo, Y., Minami, S., Watanabe, Y. and Narita, H. (1999), In vitro and in vivo antimicrobial activities of T-3811ME, a novel des-F(6)-quinolone. *Antimicrobial Agents and Chemotherapy*, **43** (5), 1077-1084.

Full Text: [1999\Ant Age Che43, 1077.pdf](1999/Ant%20Age%20Che43,%201077.pdf)

Abstract: The in vitro and in vivo activities of T-3811ME, a novel des- F(6)-quinolone, were evaluated in comparison with those of some fluoroquinolones, including a newly developed one, trovafloxacin. T-3811, a free base of T-3811ME, showed a wide range of antimicrobial spectra, including activities against Chlamydia trachomatis, Mycoplasma pneumoniae, and *Mycobacterium tuberculosis*. In particular, T-3811 exhibited potent activity against various gram-positive cocci, with MICs at which 90% of the isolates are inhibited (MIC(90)s) of 0.025 to 6.25 μg, ml. T-3811 was the most active agent against methicillin-resistant Staphylococcus aureus and streptococci, including penicillin- resistant *Streptococcus pneumoniae* (PRSP). T-3811 also showed potent activity against quinolone-resistant gram-positive cocci with GyrA and ParC (GrlA) mutations. The activity of T-3811 against members of the family Enterobacteriaceae and nonfermentative gram-negative rods was comparable to that of trovafloxacin. In common with other fluoroquinolones, T-3811 was highly active against Haemophilus influenzae, Moraxella catarrhalis, and Legionella sp., with MIC(90)s of 0.0125 to 0.1 μg, ml. T-3811 showed a potent activity against anaerobic bacteria, such as Bacteroides fragilis and Clostridium difficile. T-3811 was the most active agent against C. trachomatis (MIC, 0.008 μg, ml) and M. pneumoniae (MIC90, 0.0313 μg, ml). The activity of T-3811 against M. tuberculosis (MIC90, 0.0625 μg, ml) was potent and superior to that of trovafloxacin, In experimental systemic infection with a GrlA mutant of S. aureus and experimental pneumonia with PRSP in mice, T-3811ME showed excellent therapeutic efficacy in oral and subcutaneous administrations

Keywords: Bacteria, Comparison, Fluoroquinolone, Fluoroquinolones, Mice, *Mycobacterium tuberculosis*, Strains, *Streptococcus pneumoniae*, T-3811, Trovafloxacin CP-99, 219, Tuberculosis

Okuda, J., Hayakawa, E., Nishibuchi, M. and Nishino, T. (1999), Sequence analysis of the *gyr*A and *par*C homologues of a wild- type strain of *Vibrio parahaemolyticus* and its fluoroquinolone- resistant mutants. *Antimicrobial Agents and Chemotherapy*, **43** (5), 1156-1162.

Full Text: [1999\Ant Age Che43, 1156.pdf](1999/Ant%20Age%20Che43,%201156.pdf)

Abstract: *Vibrio parahaemolyticus* causes seafood-borne gastroenteritis in humans. It is particularly important in Japan, where raw seafood is frequently consumed. Fluoroquinolone is one of the current drugs of choice for treating patients infected by V. parahaemolyticus because resistant strains are rarely found. To study a possible fluoroquiuolone resistance mechanism in this organism, nucleotide sequences that are homologous to known gyrA and parC genes have been cloned from IT. parahaemolyticus AQ3815 and sequenced by amplification with degenerate primers of the quinolone resistance-determining region (QRDR), followed by cassette ligation-mediated PCR Open reading frames encoding polypeptides of 878 and 761 amino acid residues were detected in the gyrA and parC homologues, respectively. The V. parahaemolyticus GyrA and ParC sequences were most closely related to Erwinia carotovora GyrA (76% identity) and Escherichia coli ParC (69% identity) sequences, respectively. Ciprofloxacin-resistant mutants of AQ3815 were obtained on an agar medium by multistep selection with increasing levels of the quinolone. One point mutation only in the gyrA QRDR was detected among mutants with low- to intermediate-level resistance, while point mutations in both the gyrA and parC QRDRs were detected only in strains with high-level resistance. These results strongly suggest that, as in other gram-negative bacteria, GyrA and ParC are the primary and secondary targets, respectively, of ciprofloxacin in V. parahaemolyticus

Keywords: Cloning, DNA Topoisomerase-Iv, Escherichia-Coli, Gene, Klebsiella-Pneumoniae, *Mycobacterium tuberculosis*, Nucleotide-Sequence, Resistance, Staphylococcus-Aureus, *Streptococcus pneumoniae*, Thermostable Direct Hemolysin

Tomioka, H., Sato, K., Akaki, T., Kajitani, H., Kawahara, S. and Sakatani, M. (1999), Comparative in vitro antimicrobial activities of the newly synthesized quinolone HSR-903, sitafloxacin (DU-6859a), gatifloxacin (AM-1155), and levofloxacin against *Mycobacterium tuberculosis* and *Mycobacterium avium* complex. *Antimicrobial Agents and Chemotherapy*, **43** (12), 3001-3004.

Full Text: [1999\Ant Age Che43, 3001.pdf](1999/Ant%20Age%20Che43,%203001.pdf)

Abstract: We compared the in vitro antimycobacterial activity of a new fluoroquinolone, HSR-903, with strong activity against gram- positive cocci with those of levofloxacin (LVFX), sitafloxacin (STFX), and gatifloxacin (GFLX). The MICs of the quinolones for *Mycobacterium tuberculosis* and *Mycobacterium avium* complex were in the order STFX approximate to GFLX < LVFX less than or equal to HSR-903 and STFX less than or equal to GFLX less than or equal to HSR-903 less than or equal to LVFX, respectively. HSR- 903 effectively eliminated intramacrophagial M. tuberculosis, as did LVFX, and exhibited bacteriostatic effects against M. tuberculosis replicating in type II alveolar cells

Keywords: AM-1155, Antimycobacterial Activities, Cells, Gatifloxacin, In-Vitro, Levofloxacin, *Mycobacterium tuberculosis*, Nontuberculous Mycobacteria, Quinolones, Sitafloxacin, Tuberculosis

Tomioka, H., Sato, K., Kajitani, H., Akaki, T. and Shishido, S. (2000), Comparative antimicrobial activities of the newly synthesized quinolone WQ-3034, levofloxacin, sparfloxacin, and ciproffoxacin against *Mycobacterium tuberculosis* and *Mycobacterium avium* complex. *Antimicrobial Agents and Chemotherapy*, **44** (2), 283-286.

Full Text: [2000\Ant Age Che44, 283.pdf](2000/Ant%20Age%20Che44,%20283.pdf)

Abstract: WQ-3034 is a newly synthesized acidic fluoroquinolone. We assessed its in vitro activity against *Mycobacterium tuberculosis* and M. avium complex using levofloxacin (LVFX), ciprofloxacin (CPFX), sparfloxacin (SPFX), and KRM-1648 (KRM) as reference drugs. The MICs of these agents were determined by the agar dilution method with 7H11 medium. The MICs at which 50 and 90% of the test strains were inhibited (MIC(50)s, and MIC(90)s, respectively) for the test quinolones for rifampin (RMP)-susceptible M. tuberculosis strains were in the order SPFX < LVFX less than or equal to WQ-3034 less than or equal to CPFX, while those for RMP-resistant M. tuberculosis strains were in the order SPFX less than or equal to WQ-3034 less than or equal to LVFX < CPFX, The MICs of KRM for RMP-susceptible M. tuberculosis were much lower than those of the test quinolones, while the MIC90 of KRM for RMP-resistant M. tuberculosis strains was higher than those of the quinolones. The MIC(50)s and MIC(90)s of the test drugs for M. avium were in the order KRM < SPFX < CPFX less than or equal to WQ-3034 less than or equal to LVFX, while those for M. intracellulare were in the order KRM < SPFX < WQ-3034 is approximately equal to LVFX less than or equal to CPFX. Next, we compared the antimicrobial activities of the test drugs against M. tuberculosis organisms residing in cells of the Mono Mac 6 macrophage (M phi)-like cell line (MM6-M phi s) and of the A-549 type II alveolar cell line (A-549 cells), When drugs were added at the concentration that achieves the maximum concentration in blood, progressive killing or inhibition of the M. tuberculosis organisms residing in MM6-M phi s and A-549 cells was observed in the order KRM > SPFX greater than or equal to LVFX > WQ-3034 > CPFX. The efficacies of all quinolones against intracellular M. tuberculosis organisms were significantly Lower in A-549 cells than in MM6-M phi s. WQ-3034 at the MIC caused more marked growth inhibition of intramacrophage M. tuberculosis than did LVFX. These findings indicate that the in vitro anti-M. tuberculosis activity of WQ-3034 is greater than that of CPFX and is comparable to that of LVFX

Keywords: Cells, Drugs, Fluoroquinolones, In Vitro Activity, In-Vitro, Levofloxacin, Macrophages, Mycobacterium, *Mycobacterium tuberculosis*, Quinolones, Sparfloxacin, Tuberculosis

Dong, Y.Z., Zhao, X.L., Kreiswirth, B.N. and Drlica, K. (2000), Mutant prevention concentration as a measure of antibiotic potency: Studies with clinical isolates of *Mycobacterium tuberculosis*. *Antimicrobial Agents and Chemotherapy*, **44** (9), 2581-2584.

Full Text: [2000\Ant Age Che44, 2581.pdf](2000/Ant%20Age%20Che44,%202581.pdf)

Abstract: The mutant prevention concentration (MPC) of a C-8-methoxy fluoroquinolone exhibited a narrow distribution for 14 genetically diverse clinical isolates of *Mycobacterium tuberculosis*, indicating that results from single-isolate studies are likely to be representative. When one isolate was challenged with a variety of antituberculosis agents, C-8- methoxy fluoroquinolones were exceptional in having MPCs below the maximum concentration attained in serum by use of commonly recommended doses

Keywords: Fluoroquinolone Action, Fluoroquinolones, Healthy- Volunteers, Humans, Identification, Mutant Prevention Concentration, *Mycobacterium tuberculosis*, Pharmacokinetics, Quinolone, Resistance, Staphylococcus-Aureus, Survival, Tuberculosis

Aubry, A., Jarlier, V., Escolano, S., Truffot-Pernot, C. and Cambau, E. (2000), Antibiotic susceptibility pattern of *Mycobacterium marinum*. *Antimicrobial Agents and Chemotherapy*, **44** (11), 3133-3136.

Full Text: [2000\Ant Age Che44, 3133.pdf](2000/Ant%20Age%20Che44,%203133.pdf)

Abstract: In vitro activities of 17 antibiotics against 53 clinical strains of Mycobacterium marinum, an atypical mycobacterium responsible for cutaneous infections, were determined using the reference agar dilution method. Rifampin and rifabutin were the most active drugs (MICs at which 90% of the isolates tested were inhibited [MIC(90)s], 0.5 and 0.6 μg, ml, respectively). MICs of minocycline (MIC90, 4 μg, ml), doxycycline (MIC90, 16 μg, ml) clarithromycin (MIC90, 4 μg, ml), sparfloxacin (MIC90, 2 μg, ml), moxifloxacin (MIC90, 1 μg, ml), imipenem (MIC90, 8 μg, ml), sulfamethoxazole (MIC90, 8 μg, ml) and amikacin (MIC90, 4 μg, ml) were close to the susceptibility breakpoints. MICs of isoniazid, ethambutol, trimethoprim, azithromycin, ciprofloxacin, ofloxacin, and levofloxacin were above the concentrations usually obtained in vivo. For each drug, the MIC50, geometric mean MIC, and modal MIC were very close, showing that all the strains had a similar susceptibility pattern. Percent agreement (within +, -1 log, dilution) between MICs yielded by the Etest method and by the agar dilution method used as reference were 83, 59, 43, and 24% for minocycline, rifampin, clarithromycin, and sparfloxacin, respectively. Reproducibility with the Etest was Low, in contrast to that with the agar dilution method. In conclusion, M. marinum is a naturally multidrug-resistant species for which the agar dilution method is more accurate than the Etest for antibiotic susceptibility testing

Keywords: Chelonae, Clarithromycin, Etest, Fortuitum, In-Vitro, Infections, Levofloxacin, Moxifloxacin, Mycobacterium, Quinolone, Rifabutin, Rifampin, Sparfloxacin, Tetracyclines, Tuberculosis

Sindelar, G., Zhao, X.L., Liew, A., Dong, Y.Z., Lu, T., Zhou, J.F., Domagala, J. and Drlica, K. (2000), Mutant prevention concentration as a measure of fluoroquinolone potency against mycobacteria. *Antimicrobial Agents and Chemotherapy*, **44** (12), 3337-3343.

Full Text: [2000\Ant Age Che44, 3337.pdf](2000/Ant%20Age%20Che44,%203337.pdf)

Abstract: Mutant prevention concentration (MPC) has been proposed as a new measure of antibiotic potency by which the ability to restrict selection of resistant mutants is evaluated. To determine whether MPC provides potency information unavailable from the more customary measurement of the MIG, 18 fluoroquinolones were examined for their ability to block the growth of Mycobacterium smegmatis and to select resistant mutants from wild-type populations. Both MPC and MIC were affected by changes in the moiety at the fluoroquinolone C-8 position and in alkyl groups attached to the C-7 piperazinyl ring. When eight resistant mutants, altered in the gyrase A protein, were tested with fluoroquinolones having either a methoxy or a hydrogen at the C-8 position, the MIC for the most resistant mutant correlated better with the MPC than did the MIC for wild-type cells. For C-8-fluorine derivatives, which were generally less active than the C-8-methoxy compounds but which were more active than C-8-hydrogen derivatives, the MICs for both the mutant and the wild type correlated well, vith the MPCs. Thus, measurement of the MICs for wild-type cells can reflect the ability of a quinolone to restrict the selection of resistance, but often it does not. With the present series of compounds, the most potent contained a C-l-methoxy and a small group attached to the C-7 ring

Keywords: Fluoroquinolones, Gyrase, Mutations, New-York-City, Resistance, Resistant, Selection, Survival, Tuberculosis

Raherison, S., Gonzalez, P., Renaudin, H., Charron, A., Bebear, C. and Bebear, C.M. (2002), Evidence of active efflux in resistance to ciprofloxacin and to ethidium bromide by *Mycoplasma hominis*. *Antimicrobial Agents and Chemotherapy*, **46** (3), 672-679.

Full Text: [2002\Ant Age Che46, 672.pdf](2002/Ant%20Age%20Che46,%20672.pdf)

Abstract: The uptake of fluoroquinolones was characterized for the fluoroquinolone-susceptible strain PG21 of *Mycoplasma hominis*. Accumulation of fluoroquinolones appeared to occur by passive diffusion. Addition of arginine as the energizer significantly reduced the uptake of fluoroquinolones, suggesting the presence of an energy-dependent efflux process. Reserpine and orthovanadate, two multidrug pump inhibitors, increased significantly the ciprofloxacin (CIP) uptake. In contrast, such a strong effect was not observed for moxifloxacin and pefloxacin uptakes. Two ethidium bromide (EtBr)-resistant strains, selected in vitro, showed a resistance profile compatible with a multidrug-resistant phenotype, with increased MICs for the hydrophilic fluoroquinolones, CIP and norfloxacin, EtBr, and acriflavine. Taking the EtBr-resistant strain RB1La as a model, a significant decrease of the CIP and EtBr uptakes was observed compared to the reference strain PG21. In the presence of reserpine and orthovanadate, both inhibitors of ATP-dependent efflux pumps, the CIP uptake increased significantly, reaching approximately the same level as that of the susceptible strain. Similar results were obtained with EtBr uptake and efflux experiments. Our data suggest the presence of an active efflux system, possibly an ABC-type efflux pump, implicated in the resistance to CIP and unrelated compounds like EtBr in the human mycoplasma M. hominis

Keywords: Bacillus-Subtilis, Dna Gyrase, Escherichia-Coli, Fluoroquinolone Resistance, Fluoroquinolones, Mediated Multidrug-Resistance, Moxifloxacin, *Mycobacterium tuberculosis*, Pseudomonas-Aeruginosa, Quinolone Accumulation, Resistance, Staphylococcus-Aureus, *Streptococcus pneumoniae*

Yoshimatsu, T., Nuermberger, E., Tyagi, S., Chaisson, R., Bishai, W. and Grosset, J. (2002), Bactericidal activity of increasing daily and weekly doses of moxifloxacin in murine tuberculosis. *Antimicrobial Agents and Chemotherapy*, **46** (6), 1875-1879.

Full Text: [2002\Ant Age Che46, 1875.pdf](2002/Ant%20Age%20Che46,%201875.pdf)

Abstract: Moxifloxacin (MXF) is a new 8-methoxyquinolone with potent activity against *Mycobacterium tuberculosis* and a half-life of 9 to 12 h in humans. Previous in vivo studies using daily doses of 100 mg, kg of body weight have demonstrated bactericidal activity comparable to that of isoniazid (INH) in a murine model of tuberculosis (TB). Recent pharmacokinetic data suggest that MXF may have been underadministered in these studies and that a 400-mg, kg dose in mice better approximates the area under the concentration-time curve obtained in humans after a 400-mg oral dose. Therefore, the bactericidal activity of MXF in doses up to 400 mg, kg given daily or weekly for 28 days was assessed in mice infected intravenously with 5×106 CFU of M. tuberculosis. INH was used as a positive control. After 3 days of daily therapy, the CFU counts from splenic homogenates for mice treated with MXF in doses of 100 to 400 mg, kg, day were lower than those from pretreatment controls. No significant differences in CFU counts were seen when mice receiving INH or MXF at 50 mg, kg, day were compared to pretreatment controls. After 28 days of therapy, dose-dependent reductions in CFU counts in splenic homogenates were seen for daily MXF therapy. The maximum bactericidal effect was seen with daily doses of 400 mg, kg, which resulted in a reduction in CFU counts of 1 log, 0 greater than that with INH treatment, although the difference was not statistically significant. CFU counts from lung homogenates after 28 days of therapy were significantly lower in all treatment groups than in untreated controls. The weekly administration of MXF in doses ranging from 50 to 400 mg, kg resulted in no significant bactericidal activity. Mice receiving daily MXF doses of 200 and 400 mg, kg, day failed to gain weight and appeared ill after 28 days of therapy, findings suggestive of drug toxicity. In conclusion, MXF has dose- dependent bactericidal activity against M. tuberculosis in the mouse when given in doses up to 400 mg, kg, where its pharmacokinetic profile better approximates that of standard human dosages. Combination regimens which take advantage of the enhanced pharmacodynamic profile of MXF at these doses have the potential to shorten the course of antituberculous therapy or allow more intermittent (i.e., once-weekly) therapy and should be evaluated in the mouse model of TB

Keywords: 8-Methoxy Quinolone, Drugs, Fluoroquinolone, In-Vitro, Mice, Moxifloxacin, *Mycobacterium tuberculosis*, *Mycobacterium tuberculosis*, Pharmacokinetics, Safety, Toxicity, Tuberculosis

Kishii, R., Takei, M., Fukuda, H., Hayashi, K. and Hosaka, M. (2003), Contribution of the 8-methoxy group to the activity of gatifloxacin against type II topoisornerases of *Streptococcus pneumoniae*. *Antimicrobial Agents and Chemotherapy*, **47** (1), 77-81.

Full Text: [2003\Ant Age Che47, 77.pdf](2003/Ant%20Age%20Che47,%2077.pdf)

Abstract: The inhibitory activities (50% inhibitory concentrations [IC(50)s]) of gatifloxacin and other quinolones against both DNA gyrase and topoisomerase IV of the wild-type *Streptococcus pneumoniae* IID553 were determined. The IC(50)s of 10 compounds ranged from 4.28 to 582 mug, ml against DNA gyrase and from 1.90 to 35.2 mug, ml against topoisomerase IV. The inhibitory activity against DNA gyrase was more varied than that against topoisomerase IV among fluoroquinolones. The IC(50)s for DNA gyrase of the 8-methoxy quinolones gatifloxacin and AM-1147 were approximately seven times lower than those of their 8-H counterparts AM-1121 and ciprofloxacin, whereas the IC(50)s for topoisomerase IV were 1.5 times lower. Moreover, the IC50 ratios (IC50 for DNA gyrase, IC50 for topoisomerase IV) of gatifloxacin, AM-1147, and moxifloxacin, which possess 8- methoxy groups, were almost the same. The 8-methoxy quinolones showed higher antibacterial activity and less mutant selectivity against IID553 than their 8-H counterparts. These results suggest that the 8-methoxy group enhances both target inhibition, especially for DNA gyrase, leading to potent antipneumococcal activity and dual inhibition against both DNA gyrase and topoisomerase IV in the bacterial cell

Keywords: Antibacterial Activities, Antibacterial Activity, Dna Gyrase, Fluoroquinolone Action, Fluoroquinolones, Gatifloxacin, Gyrase, In-Vitro, Mechanisms, Moxifloxacin, *Mycobacterium tuberculosis*, Quinolone Resistance, Staphylococcus-Aureus, Target Preference, Topoisomerase IV, Topoisomerase-IV

Martín-Galiano, A.J. and de la Campa, A.G. (2003), High-efficiency generation of antibiotic-resistant strains of *Streptococcus pneumoniae* by PCR and transformation. *Antimicrobial Agents and Chemotherapy*, **47** (4), 1257-1261.

Full Text: [2003\Ant Age Che47, 1257.pdf](2003/Ant%20Age%20Che47,%201257.pdf)

Abstract: We designed a method by which to generate antibiotic-resistant strains of *Streptococcus pneumoniae* at frequencies 4 orders of magnitude greater than the spontaneous mutation rate. The method is based on the natural ability of this organism to be genetically transformed with PCR products carrying sequences homologous to its chromosome. The genes encoding the targets of ciprofloxacin (parC, encoding the ParC subunit of DNA topoisomerase IV), rifampin (rpoB, encoding the P subunit of RNA polymerase), and streptomycin (rpsL, encoding the S12 ribosomal protein) from susceptible laboratory strain R6 were amplified by PCR and used to transform the same strain. Resistant mutants were obtained with a frequency of 10-4 to 10-5, depending on the fidelity of the DNA polymerase used for PCR amplifications. Ciprofloxacin-resistant mutants, for which the MICs were four-to eightfold higher than that for R6, carried a single mutation of a residue in the quinolone resistance-determining region: S79 (change to A, F, or Y) or D83 (change to N or V). Rifampin-resistant strains, for which the MICs were at least 133-fold higher than that for R6, contained a single mutation within cluster I of rpoB: S482 (change to P), Q486 (change to L), D489 (change to V), or H499 (change to L or Y). Streptomycin-resistant mutants, for which the MICs were at least 64-fold higher than that for R6, carried a mutation at either K56 (change to I, R, or T) or K101 (change to E). PCR products obtained from the mutants were able to transform R6 to resistance with high efficiency (> 104). This method could be used to efficiently obtain resistant mutants for any drug whose target is known

Keywords: Escherichia-Coli, F-0 Complex, Fluoroquinolone Resistance, Molecular-Basis, *Mycobacterium tuberculosis*, Protein S12 Gene, Rifampicin Resistance, RNA- Polymerase, Streptomycin Resistance, Topoisomerase-IV

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? Carpendale, M.T.F. and Freeberg, J.K. (1991), Ozone inactivates HIV at noncytotoxic concentrations. *Antiviral Research*, **16** (3), 281-292.

Full Text: [1991\Ant Res16, 281.pdf](1991/Ant%20Res16,%20281.pdf)

Abstract: The inactivation of human immunodeficiency virus (HIV) and cytotoxic properties of ozone-treated serum and serum-supplemented media were examined. The titer of HIV suspensions in human serum was reduced in a dose-dependent manner when treated with total reacted ozone concentrations at a range of 0.5 to 3.5 µg ml-1. Complete inactivation of HIV suspensions was achieved by 4.0 µg ml-1 of ozone in the presence or absence of H-9 cells. In contrast, cellular metabolism, as measured by MTT dye cleavage, and DNA replication, as measured by BUdR incorporation, were enhanced in H-9 cells grown in media treated with quantities of ozone that completely inactivate HIV. The permissively HIV-infected cell line HXB/H-9 was cultured in ozone-treated media for six days with culture supernatants being sampled and assayed on alternate days for HIV p24 core protein. HIV p24 was reduced in all treated cultures compared to control cultures, with an average reduction of 46% [p24].

Keywords: HIV, Ozone, Noncytotoxic, Virus Inhibitor, Human Immunodeficiency Virus, Antigen, Disinfection, Retrovirus, Invitro

? Zhao, S.H., Liu, E.Q., Wei, K.N., Lu, S.M., Chu, Y.L., Li, Y.F., Wang, Y.L., Huang, B.Q., Chen, Y.L. and Yang, P.H. (2011), Interferon plus Chinese herbs are associated with higher sustained virological response than interferon alone in chronic Hepatitis C: A meta-analysis of randomised trials. *Antiviral Research*, **89** (2), 156-164.

Full Text: [2011\Ant Res89, 156.pdf](2011/Ant%20Res89,%20156.pdf)

Abstract: Background/aims: Traditional Chinese herbal therapies are widely used for the treatment of chronic hepatitis C (CHC) in Asia. The aim of this study was to perform a meta-analysis of randomised controlled trials (RCTs) comparing interferon therapies with Chinese herbal therapies and/or interferon plus Chinese herb therapies for the treatment of CHC. Methods: The Cochrane Central Register of Controlled Trials, Medline, Science Citation Index, EMBASE, China National Knowledge Infrastructure, Wanfang Database and China Biomedical Database were searched to identify RCTs that evaluated the virological response to interferon therapies, Chinese herbal therapies and interferon plus Chinese herb therapies in CHC patients. We statistically combined data using a random-effect meta-analysis according to the intention-to-treat principle. Results: The literature search yielded 770 studies, and 26 RCTs comprising 1905 patients matched the selection criteria. Overall, the sustained virological response (SVR) was significantly higher in patients treated with interferon plus Chinese herbs than in patients treated with interferon alone (49% vs 33%, relative risk, 1.52; 95% confidence interval: 1.23-1.89; p< 0.05). Combined therapies of interferon plus Chinese herb therapies were also superior to interferon therapies alone in achieving the end-of-treatment viral response (ETVR), and resulted in fewer relapses, fewer adverse events and more rapid alanine transaminase normalisation. Interferon therapies achieved higher ETVR than Chinese herbal therapies, but they yielded a similar SVR. Conclusions: The current evidence suggests that combined therapies of interferon plus Chinese herbs yielded a higher SVR, and resulted in fewer relapses and fewer adverse events than interferon therapies. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Alternative Medicine, Asia, China, Chinese, Chinese Herbs, Chronic, Chronic Hepatitis, Chronic Hepatitis C, Confidence, Criteria, Data, Diseases, Events, Evidence, Hepatitis, Hepatitis C, Interferon, Interval, Literature, Meta-Analysis, Metaanalysis, Patients, Quality, Randomised, Randomised Controlled Trials, Relative Risk, Ribavirin, Rights, Risk, Science Citation Index, Selection Criteria, Therapy, Treatment, United-States, Viral, Virus-Infection

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: Impact Factor

? Garcea, G., Dennison, A.R., Steward, W.P. and Berry, D.P. (2003), Chemoprevention of gastrointestinal malignancies. *ANZ Journal of Surgery*, **73** (9), 680-686.

Full Text: [2003\ANZ J Sur73, 680.pdf](2003/ANZ%20J%20Sur73,%20680.pdf)

Abstract: Background: There has been considerable interest in the use of chemical or dietary agents to suppress or inhibit the development of tumours in the early stages of carcinogenesis. This concept is known as chemoprevention and although the potential for such agents is tremendous, evaluating their clinical benefit is beset with difficulties. Aims: Using selected agents, such as curcumin and indole-3-carbinol, as examples, the present review will discuss the possible mechanisms of chemoprevention and the problems encountered in developing these agents into clinical drugs. Methods: A review of the published literature from 1985 to the present day was performed using Medline and Web of Science search engines. Key words used were ‘gastrointestinal cancer’ and ‘chemoprevention’. Conclusion: A huge number of agents with possible chemopreventive action has been identified. Pilot trials using molecular signatures of cancer activity can be used to select which agents should be included in large-scale phase III clinical trials. Publications concerning chemoprevention are concentrated in the scientific and oncological literature but surgeons with their greater exposure to premalignant gastrointestinal disease need to be aware of current concepts in this rapidly expanding field. This knowledge would allow collaboration between oncologists and surgeons in clinical trials to further evaluate chemopreventive compounds and ascertain their clinical impact.

Keywords: 5-(2-Pyrazinyl)-4-Methyl-1,2-Dithiole-3-Thione Oltipraz, Cancer, Carcinogenesis, Chemoprevention, Clinical Trials, Collaboration, Colon-Cancer, Colorectal-Cancer, Curcumin, Development, Dietary Curcumin, Disease, Ferulic Acid, Gastrointestinal, Glutathione-S-Transferase, Impact, Indole-3-Carbinol, Interest, Kappa-B Activation, Knowledge, Literature, Malignancy, Methods, Molecular, Nonsteroidal Antiinflammatory Drugs, Protein-Kinase, Publications, Rat-Liver, Review, Science, Tumours, Web of Science

? Dowsey, M.M. and Choong, P.F.M. (2008), Early outcomes and complications following joint arthroplasty in obese patients: A review of the published reports. *ANZ Journal of Surgery*, **78** (6), 439-444.

Full Text: [2008\ANZ J Sur78, 439.pdf](2008/ANZ%20J%20Sur78,%20439.pdf)

Abstract: The incidence of obesity and the number of hip arthroplasties being carried out in Australia each year are significantly increasing. There is an overrepresentation of obesity among patients presenting for elective orthopaedic surgery. The aim of this study was to present a review of published works reporting on obesity and joint replacement surgery in terms of early clinical, functional and quality-of-life outcomes. We conducted a metasearch of databases, including PUBMED, Web of Science and The Cochrane Library, from January 1990 to May 2007. Studies published in English with a primary intention of exploring the relationship between obesity and joint arthroplasty were reviewed and results summarized. Key issues identified in relation to obesity and joint replacement surgery included clinical outcomes and complications, functional and quality of life and the influence of arthroplasty surgery on the management of obesity. Reports on early outcomes, that is in the first 12 months following joint replacement surgery, were included in the review. Results for these three key issues were summarized and reported separately. There is evidence in the published reports to support a correlation between obesity and complications following joint replacement surgery. Obesity has been found to be a specific risk factor for joint infection. Research on early functional and quality-of-life data as well as on the influence arthroplasty surgery has on weight management is lacking, and few conclusions can be drawn from the published reports. A study of significant size that examines all three issues in conjunction would be of value in identifying patients at high risk of failure in terms of both clinical and quality-of-life perspectives.

Keywords: Arthroplasty, Body-Mass Index, Cochrane, Databases, Functional, Infection, Infections, Management, Obesity, Outcomes, Patient Outcomes, Perioperative Morbidity, Postoperative Complications, Primary, Published Works, PUBMED, Quality of Life, Replacement, Research, Review, Risk, Science, Surgery, Total Hip-Arthroplasty, Total Knee Arthroplasty, Web of Science

? Paulsen, M.G., Dowsey, M.M., Castle, D. and Choong, P.F.M. (2011), Preoperative psychological distress and functional outcome after knee replacement. *ANZ Journal of Surgery*, **81** (10), 681-687.

Full Text: [2011\ANZ J Sur81, 681.pdf](2011/ANZ%20J%20Sur81,%20681.pdf)

Abstract: Background: Fifteen to thirty percent of patients report no or little functional improvement 12 months after total knee replacement (TKR). Self-reported psychological distress prior to knee replacement is common and there is some evidence that it may be an important determinant of poor functional outcome in the short to medium term. The aim of this study was to review systematically the literature on the relationship between preoperative psychological distress and post-operative functional outcome after TKR. Methods: A literature search through the University of Melbourne Library Catalogue, Web of Science, SCOPUS - V.4, Medline, CINAHL PLUS, PsycINFO, Pubmed and the Cochrane Library was performed with the following key words and terms: joint replacement, arthroplasty, mental health, pre-operative distress, preoperative distress, psychological distress and knee. Additional screening of the reference lists was performed. All eligible publications were quality assessed by two independent reviewers according to the Newcastle-Ottawa Scale. Results: The search found 10 cohort studies. The results of the studies were conflicting as six studies found a correlation between preoperative distress and functional outcome, whereas four did not. Conclusion: The results from this review are conflicting. The use of different questionnaires to assess psychological distress and functional outcome makes it difficult to draw any conclusions. Future research should focus on using appropriate scales to measure exposure and outcome. We suggest using disease-specific questionnaires to assess preoperative psychological distress and a sensitive knee-specific outcome score to assess post-operative function.

Keywords: Arthroplasty, Author, Cochrane, Cohort Studies, Depression Scale, Distress, Exposure, Functional, Health Survey, Hospital Anxiety, Joint, Knee, Literature, Medline, Mental Health, Methods, Outcome, Pain, Patient Outcomes, Patients, Physical-Function, Plus, Psychological, Publications, Quality-of-Life, Questionnaires, Research, Review, Scale, Science, Scopus, Screening, Surgery, Total Hip-Arthroplasty, Total Joint Arthroplasty, University, Web of Science

# Title: Appita Journal

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Subject Categories:

Materials Science, Paper & Wood: Impact Factor 0.362, / (2000)

? Yu, H., Covey, G.H. and O’Connor, A.J. (2001), Silvichemicals from pulp mill wastes: Biosorption of metal ions on ellagic acid. *Appita Journal*, **54** (6), 511-517.

Abstract: A pipe deposit waste containing metal complexes of ellagic acid from a pulp mill was pretreated by an optimised purification method to break down the complexes to ellagic acid and then examined for its capacity to sequester the heavy metals Cu(II), Cr(III) and Zn(II) from dilute aqueous solutions. Pretreatment with HCl of various concentrations resulted in different purities of ellagic acid and adsorption capacities for Cu(II), ranging from 5.4 to 6.2 meq/g o.d. biomass, which were higher than that of a commercial ellagic acid sample. The uptake of copper, zinc and chromium on the purified ellagic acid waste was optimal at different solution pH conditions (4 to 7), indicating its promise for selective metal separations. Biosorption of chromium was reasonably rapid, reaching more than 95% of the final uptake value within the first 2 hours of contact. The Langmuir isotherm model was suitable for describing the metal adsorption for all the ellagic acid samples tested. The purified ellagic acid wastes, and commercial sample, were characterised by H-1 NMR spectroscopy and scanning electron microscopy in order to help clarify the observed variations in adsorption performance.

Keywords: Ellagic Acid, Pipe Deposit, Biosorption, Heavy Metals, Adsorption, Wastewater Treatment, Heavy-Metals, Removal, Purification, Sorption, Biomass

# Title: Application Research of Computers

Full Journal Title: Application Research of Computers

ISO Abbreviated Title:

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ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Guo, Y. and Yu, H. (2007), Biblio-metrilogical analysis on development trend of computer science in China. *Application Research of Computers*, **24** (12), 28-31.

Abstract: The paper analyzed the status quo and development trend of computer science in China based on bibliometrics. According to the data from Web of Science and ESI, analyzed some indices such as number of papers, citation frequency, average citations per paper and impact factor, in order to study the trend of papers in computer science, the development of main sub-fields and the influence of the periodicals that publish these papers.

Keywords: Analysis, Bibliometrics, China, Citation, Citation Frequency, Citations, Data, Development, Impact, Impact Factor, Indices, Papers, Periodicals, Science, Trend

# Title: Applied Biochemistry and Biotechnology

Full Journal Title: [Applied Biochemistry and Biotechnology](http://www.ingentaconnect.com/content/hum/abab)

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Subject Categories:

Biochemistry & Molecular Biology: Impact Factor 0.843, 245/310 (2000); Impact Factor 0.828, 250/308 (2001); Impact Factor 0.890, 219/266 (2002); Impact Factor 0.690, 230/261 (2003); Impact Factor 0.907, 221/261 (2004); Impact Factor 0.805, 229/261 (2005); Impact Factor 1.420, 219/238 (2009)

Biotechnology & Applied Microbiology: Impact Factor 0.843, 75/134 (2000); Impact Factor 0.828, 83/131 (2001); Impact Factor 0.890, 81/131 (2002); Impact Factor 0.690, 95/132 (2003); Impact Factor 0.907, 91/133 (2004); Impact Factor 0.805, 106/139 (2005); Impact Factor 1.420, 98/152 (2009)

? Bryant, P.S., Petersen, J.N., Lee, J.M. and Brouns, T.M. (1992), Sorption of heavy metals by untreated red fir sawdust. *Applied Biochemistry and Biotechnology*, **34-35** (1), 777-788.

Full Text: [1992\App Bio Bio34, 777.pdf](1992/App%20Bio%20Bio34,%20777.pdf)

Abstract: Equilibrium and rate relationships have been determined for the sorption of divalent copper (Cu2+) and hexavalent chromium (Cr6+) onto untreated Red Fir sawdust. For both ions, the equilibrium sorption levels were determined to be a function of the solution pH and temperature. The equilibrium adsorption capacity of the sawdust for Cu2+ was found to increase with increasing pH. However, for Cr6+ the sorption capacity increased with decreasing pH. For both ions, the rate of adsorption and the equilibrium adsorption capacity increased with temperature. The sorption capacity of alpha-cellulose was at least an order of magnitude less than the untreated sawdust

Keywords: Adsorption, Binding, Chromium, Copper, Heavy Metals, Hexavalent Chromium, Ions, Sawdust, Sorption, Wood

? Corder, S.L. and Reeves, M. (1994), Biosorption of nickel in complex aqueous waste streams by *Cyanobacteria*. *Applied Biochemistry and Biotechnology*, **45-46** (1), 847-859.

Full Text: [1994\App Bio Bio45, 847.pdf](1994/App%20Bio%20Bio45,%20847.pdf)

Abstract: A study was undertaken to determined if a suitable biosorbent could be found for removal of nickel at low concentrations (< 20 parts per million [ppm]) from a chemically complex wastewater effluent generated by electroplating operations. Algae and cyanobacteria were chosen as candidate biosorbent materials because they are easy to grow and they have the ability to withstand processing into biosorbent materials. Several species were screened for nickel-biosorption capacity initially, and three species of cyanobacteria were selected for further study based on their performance in the scoping tests. When compared to live controls, autoclaving improved the binding capacities of all three species, but usually biosorption data from experiments with live cells were more consistent. None of the three species was able to bind nickel efficiently in actual effluent samples. Further experimentation indicated that sodium ions, which were present in high concentrations in the effluent, were interfering with the ability of the cells to bind nickel. Adsorption isotherm plots for biosorption of nickel by two species of Anabaena in NiCl2-deionized water solutions were prepared.

Keywords: Accumulation, Algae, Anacystis-Nidulans, Binding, Biosorption, Blue-Green-Alga, C-Vulgaris, Cyanobacteria, Ions, Isotherm, Nickel, Strains, Toxicity, Transport, Waste-Water, Zinc

Holan, Z.R. and Volesky, B. (1995), Accumulation of cadmium lead and nickel by fungal and wood biosorbents. *Applied Biochemistry and Biotechnology*, **53** (2), 133-146.

Full Text: [1995\App Bio Bio53, 133.pdf](1995/App%20Bio%20Bio53,%20133.pdf)

Abstract: Native fungal biomass of fungi *Absidia orchidis*, *Penicillium Chrysogenum*, *Rhizopus Arrhizus*, *Rhizopus nigricans* and modified spruce sawdust (*Picea engelmanii*) sequestered metals in the following decreasing preference Pb > Cd > Ni. The highest metal uptake was qmax = 351 mgPb/g *A. orchidis* biomass. *P. chrysogenum* biomass could accumulate cadmium best at 56 mgCd/g. The sorption of nickel was the weakest always at < 5 mgNi/g. The spruce sawdust was modified by crosslinking, oxidation to acidic oxoforms and by substitution. The highest metal uptake was observed in phosphorylated sawdust reaching qmax = 224 mgPb/g, 56 mgCd/g and 26 mgNi/g. The latter value is comparable to the value of nickel sorption by wet commercial resin Duolite GT-73. Some improvement in metal uptake was also observed after reinforcement of fungal biomass.

Keywords: Absidia Orchidis, Adsorbent, Aqueous-Solutions, Biomass, Biosorption, Cadmium, Cd, Fungal Biomass, Lead, Nickel, Metal, Metal Uptake, Metals, Nickel, Oxidation, *Penicillium* Chrysogenum, Removal, *Rhizopus Arrhizus*, *Rhizopus* Nigricans, Sawdust, Sawdust Sorption, Sorption

Chua, H. and Hua, F.L. (1996), Effects of a heavy metal (zinc) on organic adsorption capacity and organic removal in activated sludge, *Applied Biochemistry and Biotechnology*, **57-58** (1), 845-849.

Full Text: [1996\App Bio Bio57, 845.pdf](1996/App%20Bio%20Bio57,%20845.pdf)

Abstract: Effects of a common heavy metal (zinc) on activated sludge were studied with a sequencing batch reactor (SBR). Organic removal in activated sludge was postulated to proceed by a rapid adsorption of organics on the sludge, followed by a slower metabolic assimilation mechanism. Metal-laden waste water at a subtoxic level affected the SBR performance to different extents depending on the hydraulic retention time (HRT). Heavy metal acted as a strong competitor for active sites on the sludge, hampering organic adsorption, and affected the COD reduction efficiency under a short HRT.

Tsao, G.T., Zheng, Y.Z., Lu, J. and Gong, C.S. (1997), Adsorption of heavy metal ions by immobilized phytic acid. *Applied Biochemistry and Biotechnology*, **63-65** (1), 731-741.

Full Text: [1997\App Bio Bio63, 731.pdf](1997/App%20Bio%20Bio63,%20731.pdf)

Abstract: Phytic acid (myoinositol hexaphosphate) or its calcium salt, phytate, is an important plant constituent. It accounts for up to 85% of total phosphorus in cereals and legumes. Phytic acid has 12 replaceable protons in the phytic molecule, rendering it the ability to complex with multivalent cations and positively charged proteins. Poly 4-vinyl pyridine (PVP) and other strong-based resins have the ability to adsorb phytic acid. PVP has the highest adsorption capacity of 0.51 phytic acid/resins. The PVP resin was used as the support material for the immobilization of phytic acid. The immobilized phytic acid can adsorb heavy metal ions, such as cadmium, copper, lead, nickel, and zinc ions, from aqueous solutions. Adsorption isotherms of the selected ions by immobilized phytic acid were conducted in packed-bed column at room temperature. Results from the adsorption tests showed 6.6 mg of Cd2+, 7 mg of Cu2+, 7.2 mg of Ni2+, 7.4 mg of Pb2+, and 7.7 mg of Zn2+ can be adsorbed by each gram of PVP-phytic acid complex. The use of innmobilized phytic acid has the potential for removing metal ions from industrial or mining waste water.

Keywords: Myoinositol, Phytic Acid, Heavy Metal Ion Removal, Immobilization, Poly 4-Vinyl Pyridine (PVP)

? Ishikawa, S., and Suyama, K. (1998), Recovery and refining of Au by gold-cyanide ion biosorption using animal fibrous proteins. *Applied Biochemistry and Biotechnology*, **70-72** (1), 719-728.

Full Text: [1998\App Bio Bio70, 719.pdf](1998/App%20Bio%20Bio70,%20719.pdf)

Abstract: Animal fibrous proteins (AFPs) such as egg-shell membrane (ESM), chicken feather (CF), wool, silk, or elastin are an intricate network of stable and water-insoluble fibers with high surface area and are abundant bioresources. Every AFP tested was found to accumulate gold-cyanide ion from aqueous solutions in high yield, depending on pH and some other parameters. Gold-cyanide ion is adsorbed by AFP at low pH range, with maximum binding observed at approx pH 2.0. Under the certain conditions, gold-cyanide ion was accumulated up to 8.6, 7.1, 9.8, 2.4, and 3.9% of dry weight on ESM, CF, wool, silk, and elastin, respectively. Ln the case of ESM, it was found that ESM removed gold-cyanide ion almost quantitatively and almost all the gold uptake by ESM was easily desorbed with 0.1 M NaOH. ESM can be used repeatedly for the process of gold adsorption-desorption. The gold-biosorptive capacity of ESM that was chemically modified with glutaraldehyde was higher than that of control. In column procedure, ESM packed on column removed gold-cyanide ion from the dilute aqueous solution to extremely low concentrations (nondetectable concentration of below 1 ppb).

Keywords: Bacillus-Subtilis, Algal Biomass, Cell-Walls, Metals

Ishikawa, S., Suyama, K. and Satoh, I. (1999), Biosorption of actinides from dilute waste actinide solution by egg-shell membrane. *Applied Biochemistry and Biotechnology*, **78** (1-3), 521-533.

Full Text: [1999\App Bio Bio77, 521.pdf](1999/App%20Bio%20Bio77,%20521.pdf)

Abstract: Removal of radioactive elements from the effluent and waste aqueous solutions is an important problem. In previous laboratory batch experiments, hen egg-shell membrane (ESM) was stable as an insoluble protein and was very capable of binding heavy metal ions from aqueous solution. Batch laboratory pH profile, time dependency, and capacity experiments were performed to determine the binding of uranium (U) and thorium (Th) to ESM. Batch pH profile experiments indicated that the optimum pH for binding these actinides was approx 6.0 (U) or 3.0 (Th). The adsorption isotherms were developed at pH 5.0 (U) or 3.0 (Th) at 25°C, and the adsorption equilibrium data fitted both Langmuir and Freundlich models. The maximum uptakes by the Langmuir model were about 240 mgU/g and 60 mgTh/g dry weight ESM. In addition, their adsorption capacities increased as salt concentration increased. ESM could also accumulate uranium from dilute aqueous solution by adjusting to the optimum pH. These results showed that ESM was effective for removing actinides from solution and would be useful in filtration technology to remove actinides from aqueous solution.

Keywords: Uranium, Thorium, Biomass, Biosorption, Egg-Shell Membrane, Actinide, Uranium, Thorium

Sin, S.N., Chua, H., Lo, W. and Yu, P.H.F. (2000), Effects of trace levels of copper, chromium, and zinc ions on the performance of activated sludge. *Applied Biochemistry and Biotechnology*, **84-86**, 487-500.

Full Text: [A\App Bio Bio84-86, 487.pdf](A/App%20Bio%20Bio84-86,%20487.pdf)

Abstract: The effects of copper, chromium, and zinc ions, at trace levels, on the performance of a simulated activated sludge process were investigated. The results of batch adsorption experiments showed that the adsorption of copper, chromium, and zinc ions followed both the Langmuir and Freundlich isotherms. The presence of trace levels of these three metals not only reduced the adsorption rate of organic matters but also the chemical oxygen demand adsorption capacity (CAC) of the activated sludge. Metal ions competed with ale organic substrate for adsorption binding sites on the surfaces of activated sludge bioflocs and reduced the CAC. Studies performed in a sequential batch reactor (SBR) showed that the presence of trace levels of heavy metal ions in wastewater affected the SBR performance to different extents depending on the hydraulic retention time (HRT). When the reactors were operated at short HRTs of 2.5 d or less, the presence of trace levels of heavy metal ions reduced substantially the CAC of activated sludge, which, in turn, affected significantly the performance of the SBR. However, under longer HRTs (e.g., 5 d), the heavy metal ions in the wastewater reduced the CAC but had no significant effect on the chemical oxygen demand removal efficiency.

Keywords: Heavy Metals, Chemical Oxygen Demand Removal, Activated Sludge, Adsorption Capacity, Sequencing Batch Reactor, Heavy-Metal Toxicity, Biosorption

? Lei, W., Chua, H., Lo, W.H., Yu, P.H.F., Zhao, Y.G. and Wong, P.K. (2000), A novel magnetite-immobilized cell process for heavy metal removal from industrial effluent. *Applied Biochemistry and Biotechnology*, **84-86** (109), 1113-1126.

Full Text: [2000\App Bio Bio84-86, 1113.pdf](2000/App%20Bio%20Bio84-86,%201113.pdf)

Abstract: The sorption and desorption of copper(II) (Cu[II]) ions from the wastewater by magnetite-immobilized cells of Pseudomonas putida 5-x with acidic pretreatment were studied. Pretreating cells with 0.6 N HCl was found to enhance greatly the adsorption capacity of biomass up to 85.6 mg/g and had no significant effect on the loss of P. putida 5-x cells during biosorbent pretreatment. The biosorption capacity to Cu2+ of magnetite-immobilized cells of P. putida 5-x harvested during various growth phases was also investigated. The experimental results illustrated that the adsorption capacity to Cu2+ of P. putida 5-x cultured in sulfate-limiting medium reached maximum during the late stationary growth phase or early death phase, and reached minimum during the log growth phase. The mechanism of copper sequestering by this type of biomass was studied via transmission electron microscopy. A degradation of the peptidoglycan layer of the cell wall was observed in the acidic pretreatment, but no further degradation appeared after the adsorption-desorption cycle. Cu(II) accumulated mostly on the surface of the cell walls and was effectively desorbed by the acidic treatment during the desorption process.

Keywords: Adsorption, Adsorption Capacity, Adsorption-Desorption, Alginate, Biomass, Biosorbent, Biosorption, Capacity, Cell Wall, Copper, Cu(II), Cu2+, Death, Degradation, Desorption, Electron Microscopy, Experimental, Growth, Growth Phase, Heavy Metal, Heavy Metal Removal, Heavy-Metal, Industrial Effluent, Ions, Magnetite-Immobilized Cells, Mechanism, Metal, Metal Removal, Minimum, N, P, Peptidoglycan, Pretreatment, Pseudomonas, Pseudomonas Putida, Pseudomonas Putida 5-X, Ramigera, Recovery, Removal, Sorption, Sorption and Desorption Mechanism, Surface, Transmission, Transmission Electron Microscopy Analysis, Treatment, Wastewater

Low, K.S., Lee, C.K. and Tan, B.F. (2000), Quaternized wood as sorbent for reactive dyes. *Applied Biochemistry and Biotechnology*, **87** (3), 233-245.

Full Text: [2000\App Bio Bio87, 233.pdf](2000/App%20Bio%20Bio87,%20233.pdf)

Abstract: Various species of local wood modified with N-(3-chloro-2-hydroxy-propyl)-trimethylammonium chloride showed sorption enhancement for hydrolyzed Reactive Blue 2 (HRB) compared to the untreated samples. The enthalpy of sorption of HRB on Simpoh (Dillenia suffruticosa) was found to be endothermic. Maximum sorption capacity calculated from the Langmuir isotherm was 250.0 mg/g. Under continuous flow conditions HRB could be successfully removed. Dye removal was a function of bed depth and flow rate. However, the bed depth service time model of Bohart and Adams was not applicable in the HRB-quaternized wood system. The modified wood was applied to a sample of industrial textile effluent, and it was found to be able to remove the color successfully under batch conditions.

Keywords: Adsorption, Biosorption, Chemical Modification, Color Removal, Dyes, Effluent, Langmuir, Reactive Dyes, Removal, Sorbent, Sorption, Textile Effluents, Waste-Water, Wood

Low, K.S., Lee, C.K. and Lee, C.Y. (2001), Quaternized wood as sorbent for hexavalent chromium. *Applied Biochemistry and Biotechnology*, **90** (1), 75-87.

Full Text: [A\App Bio Bio90, 75.pdf](A/App%20Bio%20Bio90,%2075.pdf)

Abstract: The potential of quaternized wood (QW) chips in removing hexavalent chromium from synthetic solution and chrome waste under both batch and continuous-flow conditions was investigated. Sorption was found to be dependent on pH, metal concentration, and temperature. QW chips provide higher sorption capacity and wider pH range compared with untreated wood chips. The equilibrium data could be fitted into the Langmuir isotherm model, and maximum sorption capacities were calculated to be 27.03 and 25.77 mg/g in synthetic chromate solution and chrome waste, respectively. The presence of sulfate in high concentration appeared to suppress the uptake of chromium by QW chips. Column studies showed that bed depth influenced the breakthrough time greatly whereas flow rate of influent had little effect on its sorption on the column.

Keywords: Activated Carbon, Adsorption, Aqueous-Solutions, Biosorption, Chemical Modification, Chromium, Hexavalent Chromium, Langmuir, Metal, Recovery, Removal, Sorbent, Sorption, Sphagnum Moss Peat, Waste, Waste-Water, Wastewaters, Wood

Leung, W.C., Chua, H. and Lo, W.H. (2001), Biosorption of heavy metals by bacteria isolated from activated sludge. *Applied Biochemistry and Biotechnology*, **91** (3), 171-184.

Full Text: [A\App Bio Bio91, 171.pdf](A/App%20Bio%20Bio91,%20171.pdf)

Abstract: Twelve aerobic bacteria from activated sludge were isolated and identified. These included both Gram-positive (e.g., Bacillus) and Gram-negative (e.g., *Pseudomonas*) bacteria. The biosorption capacity of these strains for three different heavy metals (copper, nickel, and lead) was determined at pH 5.0 and initial metal concentration of 100 mg/L. Among these 12 isolates, *Pseudomonas* pseudoalcaligenes was selected for further investigation owing to its high metal biosorption capacity. The lead and copper biosorption of this strain followed the Langmuir isotherm model quite well with maximum biosorption capacity (qmax) reaching 271.7 mg of Pb2+/g of dry cell and 46.8 mg of Cu2+/g of dry cell at pH 5.0. Study of the effect of pH on lead and copper removal indicated that the metal biosorption increased with increasing pH from 2.0 to 7.0. A mutual inhibitory effect was observed in the lead-copper system because the presence of either ion affected the sorption capacity of the other. Unequal inhibitions were observed in all the nickel binary systems. The increasing order of affinity of the three metals toward P. pseudoalcaligenes was Ni < Cu < Pb. The metal biosorptive potential of these isolates, especially P. pseudoalcaligenes, may have possible applications in the removal and recovery of metals from industrial effluents.

Keywords: Activated Sludge, Biosorption, Copper Adsorption, Lead Removal, Bioremediation, Lead, Cadmium, Biomass, Removal, Effluent, Recovery

? Worg, M.F., Chua, H., Lo, W.H., Leung, C.K. and Yu, P.H.F. (2001), Removal and recovery of copper(II) ions by bacterial biosorption. *Applied Biochemistry and Biotechnology*, **91-3** (1-9), 447-457.

Full Text: [2001\App Bio Bio91-3, 447.pdf](2001/App%20Bio%20Bio91-3,%20447.pdf)

Abstract: Studies were conducted to investigate the removal and recovery of copper(II) ions from aqueous solutions by Micrococcus sp., which was isolated from a local activated sludge process. The equilibrium of copper biosorption followed the Langmuir isotherm model very well with a maximum biosorption capacity (q(max)) of 36.5 mg of Cu2+/g of dry cell at pH 5.0 and 52.1 mg of Cu2+/g of dry cell at pH 6.0. Cells harvested at exponential growth phase and stationary phase showed similar biosorption characteristics for copper. Copper uptake by cells was negligible at FH 2.0 and then increased rapidly with increasing pH until 6.0. In multimetal systems, Micrococcus sp. exhibited a preferential biosorption order: Cu similar to Pb > Ni similar to Zn. There is virtually no interference with copper uptake by Micrococcus sp. from solutions bearing high concentrations of Cl-, SO42-, and NO3- (0-500 mg/L). Sulfuric acid (0.05 M) was the most efficient desorption medium, recovering > 90% of the initial copper sorbed. The copper capacity of Micrococcus sp. remained unchanged after five successive sorption and desorption cycles. Immobilization of Micrococcus sp. in 2% calcium alginate and 10% polyacrylamide gel beads increased copper uptake by 61%. Biomass of Micrococcus sp. may be applicable to the development of potentially cost-effective biosorbent for removing and recovering copper from effluents.

Keywords: Activated Sludge, Aeruginosa Strain Csu, Alginate, Aqueous Solutions, Beads, Biomass, Bioremediation, Biosorbent, Biosorption, Biosorption Characteristics, Calcium, Calcium Alginate, Capacity, Characteristics, Copper, Copper Biosorption, Copper Removal, Cost-Effective, Cu, Desorption, Development, Effluent, Effluents, Equilibrium, Gel, Growth, Heavy-Metals, Immobilization, Ions, Isotherm, Isotherm Model, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Lead, Local, Metal Adsorption, Model, Pb, pH, Polyacrylamide, Recovery, Removal, Sludge, Solutions, Sorption, Systems, Uptake, Uranium

Chandran, C.B., Singh, D. and Nigam, P. (2002), Remediation of textile effluent using agricultural residues. *Applied Biochemistry and Biotechnology*, **102**, 207-212.

Full Text: [A\App Bio Bio102, 207.pdf](A/App%20Bio%20Bio102,%20207.pdf)

Abstract: The sorption of artificial dye effluent made from two different dyes, Solar orange 7 GLL and Solar jade Green FFB from Clariant, onto three different agricultural residues-barley husk, sugarcane bagasse, and wheat straw-was studied. Twenty percent of 600-μm particle size of these agricultural residues was used as substrates and studied individually. The percentage of dye removal was observed in concentrations of dye varying from 50 to 200 mg/L. The effect of temperature ranging from 25 to 50degreesC and pH from 6.0 to 12.0 on the dye removal by the substrates was also studied. The effective adsorption of the substrates was calculated.

Keywords: Agricultural Residues, Textile Dyes, Remediation, Barley Husk, Sugarcane Bagasse, Wheat Straw, Solar Orange, Solar Jade Green, Natural Adsorbents, Removal, Dye, Peat

? Lo, W.H., Ng, L.M., Chua, H., Yu, P.H.F., Sin, S.N. and Wong, P.K. (2003), Biosorption and desorption of copper(II) ions by *Bacillus* sp. *Applied Biochemistry and Biotechnology*, **107** (1-3), 581-591.

Full Text: [2003\App Bio Bio107, 581.pdf](2003/App%20Bio%20Bio107,%20581.pdf)

Abstract: Batch biosorption experiments were conducted to investigate the removal of Cu2+ ions from aqueous solutions by a series of bacterial strains isolated from a local activated sludge process. The characteristics of 12 isolates were identified and examined for their ability to bind Cu2+ ions from aqueous solution. Among the isolates, two species exhibited biosorption capacity >40 mg of Cu/g of dry cell. Isotherms for the biosorption of copper on bacterial cells were developed and compared, and the equilibrium data fitted well to the Langmuir and Freundlich isotherm models. The biosorption of copper increased significantly with increasing pH from 2.0 to 6.0 regardless of the species. More than 90% of copper sorbed on the cells of Bacillus sp. could be recovered by washing with 0.1 M HNO3 for 5 min. The performance of two different desorption processes was also tested and compared. The results show that five biosorption and desorption cycles are a better operation process than five successive biosorptions followed by one desorption to remove and recover copper from aqueous solution. The biosorbent could be used for at least five biosorptions and desorption cycles without loss of copper removal capacity. It can be concluded that the activated sludge or sludge-isolated bacteria could be a potential biosorbent for copper removal.

Keywords: Activated Sludge, Activated-Sludge, Aqueous Solution, Aqueous Solutions, Aqueous-Solutions, Bacillus, Bacteria, Bacteria, Batch, Biomass, Bioremediation, Biosorbent, Biosorption, Capacity, Characteristics, Copper, Copper Removal, Copper(II), Cu2+, Data, Desorption, Equilibrium, Experiments, Freundlich, Freundlich Isotherm, Heavy Metal, Heavy-Metals, Ions, Isotherm, Isotherm Models, Isotherms, Langmuir, Lead, Local, Metal Removal, Models, Operation, Performance, pH, Potential, Recovery, Removal, Sludge, Solution, Solutions, Species, Wastewater Treatment Process

Davis, T.A., Llanes, F., Volesky, B., Diaz-Pulido, G., McCook, L. and Mucci, A. (2003), 1H-NMR study of Na alginates extracted from *Sargassum* spp. in relation to metal biosorption. *Applied Biochemistry and Biotechnology*, **110** (2), 75-90.

Full Text: [A\App Bio Bio110, 75.pdf](A/App%20Bio%20Bio110,%2075.pdf)

Abstract: The use of a number of species of marine brown algae in the implementation of bioremediation strategies for toxic heavy metals is being considered and evaluated. The biosorption capacity of these algae for heavy metals resides mainly in a group of linear polysaccharides known as alginates that occur as a gel in the algal thallus. The potential for selective metal binding by the biomass of two species of Sargassum was evaluated by 1H-NMR (nuclear magnetic resonance) following a high temperature, alkaline extraction and purification of their alginate polysaccharide. The alkaline extraction protocol applied to Sargassum fluitans and Sargassum siliquosum yielded alginate samples of low viscosity, suitable for direct acquisition of well-resolved spectra. Estimates of both the ratio of beta-D-mannopyranuronosyl (M) and alpha-L-gulopyranuronosyl (G) residues along the polymer chain and the frequencies of occurrence of diad uronic acid residue pairs were obtained. Guluronic acid (G) was the major component in all extracts and the GG diads accounted for more than 49% of the polymer diads. Whereas the performance of Sargassum spp. in the metal biosorption process is a function of both its alginate content and composition, the occurrence of “G-blocks” in both purified alginates and in the raw brown seaweed is critical because it results in a well-established selectivity for divalent ions, potentially increasing the commercial effectiveness of targeted biosorption as a means of remediation.

Keywords: Alginate, Brown Seaweed, Biosorption, Extraction, Heavy Metals, Nuclear Magnetic Resonance, Uronic Acid, Sargassum, Uronic Acid Sequence, Great-Barrier-Reef, X-Ray-Diffraction, Structural Components, Crystalline-Structure, Divalent Metals, Alginic Acid, Heavy-Metals, Biomass, Lead

Volpe, A., Lopez, A. and Pagano, M. (2003), Olive husk - An alternatvie sorbent for removing heavy metals from aqueous streams. *Applied Biochemistry and Biotechnology*, **110** (3), 137-149.

Full Text: [A\App Bio Bio110, 137.pdf](A/App%20Bio%20Bio110,%20137.pdf)

Abstract: Sorption properties of olive husk were investigated under equilibrium (batch tests) and dynamic (column tests) conditions in order to assess the possibility of using such a waste material for removing heavy metals from aqueous streams. Husk samples were contacted, at 25°C, with aqueous solutions of nitric salts of Pb, Cd, Cu, and Zn. Sorption isotherms obtained from equilibrium data were fitted and interpreted by the Freundlich model. Metals-saturated husk samples resulting from column tests were air-dried and incinerated to simulate combustion in order to assess the fate of sorbed metals. The results demonstrated that, under both equilibrium and dynamic conditions, metal sorption capacity of the husk was in the sequence Pb>Cd>Cu>Zn. For all the metals, calculated Freundlich constants decreased by increasing initial metal concentration or decreasing solution pH. In dynamic tests, a significant reduction of sorption capacity was recorded (except for copper) when a metal was fed simultaneously to the others: Pb (77%); Cd (93%); Zn (68%). Combustion tests carried out on metals-saturated husk samples showed that the average losses of lead and cadmium, as volatile species, were always three to four times greater than the losses of copper and zinc, in both single-metal- and multimetal-saturated samples.

Keywords: Heavy Metals, Sorption, Olive Husk, Wastewater, Waste-Water, Toxic Metals, Ion-Exchange, Sorption, Biomass, Cu(II), Preconcentration, Biosorption, Adsorption, Sawdust

? Brennan, M.A. and Wyman, C.E. (2004), Initial evaluation of simple mass transfer models to describe hemicellulose hydrolysis in corn stover. *Applied Biochemistry and Biotechnology*, **115** (1-3), 965-976.

Full Text: [2004\App Bio Bio113, 965.pdf](2004/App%20Bio%20Bio113,%20965.pdf)

Abstract: The uncatalyzed hydrolysis and removal of xylan from corn stover is markedly enhanced when operation is changed from batch to continuous flowthrough conditions, and the increase in hemicellulose removal with flow rate is inconsistent with predictions by widely used first-order kinetic models. Mass transfer or other physical effects could influence the hydrolysis rate, and two models reported in the literature for other applications were adapted to investigate whether incorporation of mass transfer into the kinetics could explain xylan removal in both batch and continuous flowthrough reactors on a more consistent basis. It was found that a simple leaching model and a pore diffusion/leaching model could describe batch and flowthrough data with accuracy similar to that of conventional batch models and could provide a more rational explanation for changes in performance with flow rate.

Keywords: Pretreatment, Flowthrough, Batch, Mass Transfer, Hemicellulose Hydrolysis, Kinetics

? Zeroual, Y., Kim, B.S., Kim, C.S., Blaghen, M. and Lee, K.M. (2006), A comparative study on biosorption characteristics of certain fungi for bromophenol blue dye. *Applied Biochemistry and Biotechnology*, **134** (1), 51-60.

Full Text: [2006\App Bio Bio134, 51.pdf](2006/App%20Bio%20Bio134,%2051.pdf)

Abstract: Laboratory investigations of the potential use of dried biomasses of Rhizopus stolonifer, Fusarium sp., Geotrichum sp., and Aspergillus fumigatus as biosorbents for the removal of bromophenol blue (BPB) dye from aqueous solutions were conducted. Kinetics studies indicated that the BPB dye uptake processes can be well described by the pseudo-second-order model. The fungal biomasses exhibited the highest dye biosorption at pH 2.0. The Langmuir adsorption model appears to fit the dye biosorption better than the Freundlich model, with maximum dye uptake capacities ranging from 526 to 1111 mg/g, depending on the biomass used.

Keywords: Biosorption, Bromophenol Blue, Fungi, Isotherms, Kinetics, Reactive Dyes, Aspergillus-Niger, Aqueous-Solution, Color Removal, Wastewaters, Decolorization, Degradation, Adsorption, Biomass, Water

? Picardo, M.C., Ferreira, A.C.D.M. and Da Costa, A.C.A. (2006), Biosorption of radioactive thorium by Sargassum filipendula. *Applied Biochemistry and Biotechnology*, **134** (3), 193-206.

Full Text: [2006\App Bio Bio134, 193.pdf](2006/App%20Bio%20Bio134,%20193.pdf)

Abstract: In the present work, the biosorption of radioactive thorium was investigated using a dry biomass of Sargassum filipendula as the biosorbent material. Radioactive solutions containing between 2.0 and 500.0 μg thorium were tested by biosorption with S. filipendula, yielding uptake capacities from 20 to 100%, depending on the concentration of the solution. Kinetic studies indicated that equilibrium between the thorium solution and the solid fraction was achieved after three hours of contact and that a second-order model could express the equilibrium kinetics. In order to investigate the maximum biosorption capacity of the biomass an isotherm was done, based on the experimental data, which revealed the maximum uptake capacity to be 2.59 μmol thorium, g biomass. The experimental data fitted well to a Langmuir model, which provided a good correlation between the experimental and predicted thorium uptake values.

Keywords: Biomass, Biosorption, Cadmium, Equilibrium, EU, Green, Ions, Isotherm, Kinetic Models, Kinetics, La, Model, Sargassum Filipendula, Second-Order, Sorption, Thorium, Uranium, Wastewater

? Da Costa, A.C.A., Luna, A.S. and Pafume, R. (2007), Characterization of thermostructural damages observed in a seaweed used for biosorption of cadmium - Effects on the kinetics and uptake. *Applied Biochemistry and Biotechnology*, **137**, 835-845.

Full Text: [2007\App Bio Bio137, 835.pdf](2007/App%20Bio%20Bio137,%20835.pdf)

Abstract: The effect of drying Sargassum filipendula on the kinetics and uptake of cadmium was studied. The maximum uptake was not reduced when oven-dried biomass was used for cadmium. concentrations from 10.0 to 500.0 mg/L. Kinetics indicated better performance of the in natura biomass. Drying at 333 K affected the uptake capacity. Results fit the Langmuir model better than the Freundlich. This process followed pseudo-second-order kinetics. Thermogravimetric and infrared analysis confirmed that no structural damage occurred after drying, and no differences between the biomasses were observed. Temperatures from 303 to 328 K affected cadmium uptake capacity.

Keywords: Cadmium, Kinetics, Sargassum Filipendula, Thermal Effects, Uptake Capacity, Biosorption, Sargassum sp, Biomass, Adsorption, Pb2+

? Lagoa, R. and Rodrigues, J.R. (2007), Evaluation of dry protonated calcium alginate beads for biosorption applications and studies of lead uptake. *Applied Biochemistry and Biotechnology*, **143** (2), 115-128.

Full Text: [2007\App Bio Bio134, 115.pdf](2007/App%20Bio%20Bio134,%20115.pdf)

Abstract: Alginate polysaccharide is a promising biosorbent for metal uptake. Dry protonated calcium alginate beads for biosorption applications were prepared, briefly characterized and tested for lead uptake. Several advantages of this biosorbent are reported and discussed in comparison with other alginate-based sorbents. The alginate beads contained 4.7 mmol/g of COOH groups, which suffered hydrolysis near pH 4. The Weber and Morris model, applied to kinetic results of lead uptake, showed that intraparticle diffusion was the rate-controlling step in lead sorption by dry alginate beads. Equilibrium experiments were performed and the data were fitted with different isotherm models. The Langmuir equation was the most adequate to model lead sorption. The maximum uptake capacity (q (max)) was estimated as 339 mg/g and the Langmuir constant (b) as 0.84 l/mg. These values were compared with that of other sorbents found in the literature, indicating that dry protonated calcium alginate beads are among the best biosorbents for the treatment and recovery of heavy metals from aqueous streams.

Keywords: Biosorption, Alginate, Lead, Heavy Metal, Water Treatment, Metal Recovery, Polysaccharide, Heavy-Metals, Aqueous-Solutions, Waste-Water, Divalent-Cations, Sargassum spp., Ca-Alginate, Gel Beads, Adsorption, Ions, Removal

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Full Text: [2010\App Bio Bio160, 467.pdf](2010/App%20Bio%20Bio160,%20467.pdf)

Abstract: A new chitosan imprinting adsorbent using diatomite as core material was prepared by using the surface molecular imprinting technology with the Pb2+ as imprinted ion. The preparation process conditions of the surface molecular imprinting adsorbent were studied. The adsorbent was characterized by using Fourier transform infrared (FTIR) spectrum. FTIR spectrum indicated that it was cross-linked by epichlorohydrin. The new imprinting adsorbent could provide a higher adsorption capacity for Pb2+, which reached 139.6 mg/g increasing 32.3% compared with cross-linking chitosan adsorbent (the initial Pb2+ concentration of 600 mg/L). The adsorption velocity was quick and the equilibration time of the imprinting adsorbent for Pb2+ was 3h that shortened about 40% compared with cross-linking chitosan adsorbent. It had a more wide pH range of 5-7 than that of cross-linking chitosan adsorbent. The new imprinting adsorbent can be reused for up to ten cycles without loss of adsorption capacity. In the kinetics and isotherm study, the pseudosecond order model and Langmuir model could represent the adsorption process.

Keywords: Adsorbent, Adsorption, Adsorption, Adsorption Capacity, Aqueous-Solution, Capacity, Chitosan, Chitosan, Concentration, Cross-Linked, Crosslinking, Diatomite, Equilibration, FTIR, Hydrogel Beads, Isotherm, Kinetics, Langmuir, Langmuir Model, Lead Ion, Metal Ions, Model, Modified Diatomite, Pb2+, pH, Preparation, Pseudosecond-Order, Range, Removal, Sorption, Surface, Surface Molecular Imprinting, Synthesis, Technology

? Michalak, I. and Chojnacka, K. (2010), The new application of biosorption properties of *Enteromorpha prolifera*. *Applied Biochemistry and Biotechnology*, **160** (5), 1540-1556.

Full Text: [2010\App Bio Bio160, 1540.pdf](2010/App%20Bio%20Bio160,%201540.pdf)

Abstract: The main goal of this paper was to elaborate the possibility of industrial application of biosorption properties of Enteromorpha prolifera (production of mineral feed additives for livestock). In this study, biosorption process was used in the binding of chromium(III) ions from aqueous solution by the green macroalga. The kinetics of biosorption process was studied in a batch system with respect to the initial pH, temperature, initial metal ion concentration, and initial biomass concentration. *E. prolifera* demonstrated good biosorption properties. The equilibrium biosorption capacity increased with pH and with initial concentration of metal ions. The uptake of chromium(III) ions by the dried alga was affected by the temperature, but in small extent. With increase of the biomass concentration, the decrease of biosorption capacity at equilibrium was observed. The best biosorption conditions were determined as the initial pH 5, temperature 25 A degrees C, the initial chromium(III) ions concentration 400 mg/L, and biosorbent concentration 1.0 g/L. Biosorption capacity at equilibrium reached at these conditions was 100 mg/g. The mechanism of the biosorption of chromium(III) ions by *E. prolifera* was analyzed in equilibrium experiments. Equilibrium data were fitted to Langmuir, Dubinin-Radushkevich, and Freundlich adsorption isotherms. The most suitable model for describing the obtained data was Langmuir model. The experimental results and the analysis of the solution before and after biosorption process suggested ion-exchange mechanism.

Keywords: Adsorption, Adsorption Isotherms, Analysis, Application, Aqueous Solution, Batch, Batch System, Binding, Biomass, Biosorbent, Biosorption, Capacity, Chromium(III), Concentration, Data, Enteromorpha Prolifera, Equilibrium, Experimental, Experiments, Feed, Freundlich, Ion Exchange, Ion-Exchange, Ionexchange, Ions, Isotherms, Kinetics, Langmuir, Langmuir Model, Livestock, Mar, Mechanism, Metal, Metal Ion, Metal Ions, Model, pH, Small, Solution, Temperature, Uptake

? Kumar, D., Prakash, B., Pandey, L.K. and Gaur, J.P. (2010), Sorption of paraquat and 2,4-D by an *Oscillatoria* sp.-dominated cyanobacterial mat. *Applied Biochemistry and Biotechnology*, **160** (8), 2475-2485.

Full Text: [2010\App Bio Bio160, 2475.pdf](2010/App%20Bio%20Bio160,%202475.pdf)

Abstract: The present study characterises sorption of two pesticides, namely, paraquat (PQ) and 2,4-dichlorophenoxyacetic acid (2,4-D) by an *Oscillatoria* sp.-dominated cyanobacterial mat. Sorption of PQ onto the test mat was not significantly affected by the pH of the solution within the pH range 2-7. However, 2,4-D sorption was strongly influenced by the solution pH and was maximum at pH2. Whereas PQ sorption increased with increase in temperature, 2,4-D sorption showed an opposite trend. The sorption of PQ and 2,4-D achieved equilibrium within 1 h of incubation, independent of concentration of pesticide and mat biomass in the solution. The pseudo-second-order kinetic model better defined PQ sorption than the pseudo-first-order model, whereas 2,4-D sorption was well defined by both the models. Sorption isotherms of both the pesticides showed L-type curve. Freundlich model more precisely defined PQ sorption than Langmuir model, thereby suggesting heterogeneous distribution of PQ binding sites onto the biomass surface. However, the Langmuir model more correctly defined 2,4-D sorption, thus, indicating homogeneous distribution of 2,4-D binding sites onto the biomass surface. The test biomass is a good sorbent for the removal of PQ because it could, independent of pH of the solution, sorb substantial amount of PQ (qmax = 0.13 mmol g-1).

Keywords: 2,4-D, Acid, Activated Carbon, Adsorption, Aqueous-Solution, Atrazine, Binding, Binding Sites, Biomass, Concentration, Cyanobacterial Mat, Distribution, Equilibrium, Freundlich, Freundlich Model, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Model, Model, Models, Oscillatoria, Paraquat, Pesticide, Pesticides, pH, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Range, Removal, Rice Husk, Solution, Sorbent, Sorption, Sorption Isotherms, Surface, Temperature, Trend, Waste-Water

? Reategui, M., Maldonado, H., Ly, M. and Guibal, E. (2010), Mercury(II) biosorption using *Lessonia* sp kelp. *Applied Biochemistry and Biotechnology*, **162** (3), 805-822.

Full Text: [2010\App Bio Bio162, 805.pdf](2010/App%20Bio%20Bio162,%20805.pdf)

Abstract: Lessonia nigrescens and Lessonia trabeculata kelps have been tested for the sorption of mercury from aqueous solutions. A pretreatment (using CaCl2) allowed stabilizing the biomass that was very efficient for removing Hg(II) at pH 6-7. Sorption isotherms were described by the Langmuir equation with sorption capacities close to 240-270 mg Hg g-1 at pH 6. The temperature had a negligible effect on the distribution of the metal at equilibrium. The presence of chloride anions had a more marked limiting impact than sulfate and nitrate anions. The uptake kinetics were modeled using the pseudo-second-order equation that fitted better experimental data than the pseudo-first-order equation. The particle size hardly influenced sorption isotherms and uptake kinetics, indicating that sorption occurs in the whole mass of the biosorbent and that intraparticle mass transfer resistance was not the limiting rate. Varying the sorbent dosage and the initial metal concentration influenced the equilibrium, but the kinetic parameters were not drastically modified. Metal can be eluted with hydrochloric acid, citric acid, or acidic KI solutions.

Keywords: Alginate, Anions, Aqueous Solutions, Aqueous-Solution, Biomass, Biosorbent, Biosorption, Cadmium, Chloride, Citric Acid, Concentration, Copper, Data, Desorption, Distribution, Equilibrium, Experimental, Heavy-Metal Biosorption, Hg(II), Impact, Ion-Exchange-Resins, Isotherms, Kelp, Kinetic, Kinetic Parameters, Kinetics, Langmuir, Langmuir Equation, Lead, Lessonia, Marine-Algae, Mass Transfer, Mercury, Mercury(II), Metal, Modified, Nitrate, Particle Size, pH, Pretreatment, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-First-Order Equation, Pseudo-Second-Order, Pseudo-Second-Order Equation, Resistance, Size, Solutions, Sorbent, Sorption, Sorption Isotherms, Sulfate, Temperature, Uptake, Uptake Kinetics

? Wu, Y.H., Hu, Y., Xie, Z.W., Feng, S.X., Li, B. and Mi, X.M. (2011), Characterization of biosorption process of Acid Orange 7 on waste brewery’s yeast. *Applied Biochemistry and Biotechnology*, **163** (7), 882-894.

Full Text: [2011\App Bio Bio163, 882.pdf](2011/App%20Bio%20Bio163,%20882.pdf)

Abstract: The use of cheap, high-efficiency, and ecofriendly adsorbent has been studied as an alternative way for the removal of dyes from wastewater. This paper investigated the use of waste brewery’s yeast for the removal of acid orange 7 from aqueous solution. The optimum removal of acid orange 7 was found to be 3.561 mg/g at pH 2.0, 10 mg/L initial concentration and 303 K. The kinetic studies indicated that the biosorption process of acid orange 7 agreed well with the pseudo-second-order model. The external diffusion is the rate-controlling step of the initial fast adsorption (< 20 min) and then the intraparticle diffusion dominated the mass transfer process. Langmuir, Freundlich, and Dubinin-Radushkevich models were applied to describe the biosorption isotherm of acid orange 7 by waste brewery’s yeast. Langmuir isotherm model fits the equilibrium data, at all the studied temperatures, better than the other isotherm models which indicates monolayer dye biosorption process. The highest monolayer biosorption capacity was found to be 2.27x 10(-3) mol/g at 303 K. The calculated thermodynamic parameters (ΔG, ΔS, ΔH) showed the biosorption process to be spontaneous and exothermic in nature. Amine or amino, amide, carboxyl, phosphate groups are responsible for the dyes biosorption based on the result of Fourier transform infrared analysis.

Keywords: Acid Orange 7, Adsorption, Amine, Aqueous-Solutions, Basic Dye, Batch System, Biosorption, Characterization, Decolorization, Dye, Dyes, Equilibrium, Freundlich, Green, Kinetics, Langmuir, Langmuir Isotherm, Methylene-Blue, pH, Removal, Sorption, Thermodynamic, Waste Brewer’s Yeast

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Zakharova, V.I., Ignat’ev, V.O., Korenevskii, A.A., Avakyan, Z.A. and Karavaiko, G.I. (2001), Removal of nonferrous heavy metals from industrial sewage using biosorbents. *Applied Biochemistry and Microbiology*, **37** (4), 348-353.

Full Text: [A\App Bio Mic37, 348.pdf](A/App%20Bio%20Mic37,%20348.pdf)

Abstract: Producers of the antibiotics neomycin and lincomycin were most potent in sorbing nonferrous metals; they removed 99% Zn and Cd and 95% Ni. The degree of metal sorption increased with an increase in solution pH and calcium content in the biomass. Dynamic studies of biosorbents prepared from a microbial biomass showed that neomycin, industrial waste products are highly efficient in treating galvanic washing water. The total dynamic exchange capacities by nickel and cadmium were 6.85 and 7.16 mg/ml, respectively.

Keywords: Biosorption

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Apesteguia, C.R., Reyes, J.F.P.D., Garetto, T.F. and Parera, J.M. (1982), Sulfurization of Pt/Al2O3-Cl Catalysts. III. Kinetics of H2S adsorption on alumina, chlorided alumina and Pt/Al2O3-Cl. *Applied Catalysis*, **4** (1), 5-11.

Full Text: [A\App Cat4, 5.pdf](A/App%20Cat4,%205.pdf)

? Kohler, M.A. (1986), Comparison of mechanically agitated and bubble column slurry reactors. *Applied Catalysis*, **22** (1), 21-53.

Full Text: [1986\App Cat22, 21.pdf](1986/App%20Cat22,%2021.pdf)

Abstract: Gas-liquid-solid reactors have a wide range of applications in laboratory and industrial scale processes and conventional slurry reactors are often used to achieve certain specific objectives. The two main types of slurry reactors, the mechanically agitated and the bubble column slurry reactor, are reviewed in this paper. Special emphasis is given to the important design and operation parameters as well as the reactor performances. Finally, both types are compared including all major advantages-disadvantages and helpful guidelines for the choice of reactor are discussed.

# Title: Applied Catalysis A-General

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Environmental Sciences: Impact Factor 1.557, 21/126 (1999); Impact Factor 1.576, 21/127 (2000); Impact Factor 2.258, 11/129 (2001)

Mishra, T. and Parida, K. (1998), Transition metal pillared clay 4. A comparative study of textural, acidic and catalytic properties of chromia pillared montmorillonite and acid activated montmorillonite. *Applied Catalysis A-General*, **166** (1), 123-133.

Full Text: [A\App Cat A-Gen166, 123.pdf](A/App%20Cat%20A-Gen166,%20123.pdf)

Abstract: The preparation, characterisation and catalytic activities of chromia pillared montmorillonites were investigated. The Na-exchanged montmorillonite shows higher uptake of chromium(III) acetato complex than that of acid activated clay. However, in both the cases, stepwise ion-exchange process results in better intercalation compared to the single step process. Both the pillared materials are found thermally stable up to 773 K. Materials prepared from Na-exchanged clay show higher surface area, micropore volume and basal spacing, whereas the materials prepared from acid-activated clay possess higher mesopore volume, average pore diameter and surface acidity. A substantial increase in acidity due to acid activation before pillaring is observed in the 2-propanol and methanol dehydration reactions. Increase in cracking activity indicates the formation of an extra number of Bronsted acid sites due to the acid activation. However, with the increase in reaction temperature above 673 K, cracking activity decreases and dehydrogenation activity increases owing to the loss of Bronsted acid sites. Surface poisoning studies proved that alcohol dehydration and cumene cracking depend on the Bronsted acid sites, while dehydrogenation of cumene occurs on Lewis acid sites. (C) 1998 Elsevier Science B.V.

Keywords: Chromia Pillared Montmorillonite, Alcohol, Cumene

Gervasini, A. (1999), Characterization of the textural properties of metal loaded ZSM-5 zeolites. *Applied Catalysis A-General*, **180** (1-2), 71-82.

Full Text: [A\App Cat A-Gen180, 71.pdf](A/App%20Cat%20A-Gen180,%2071.pdf)

Abstract: The textural properties of metal ion over-exchanged zeolites, Co-, Cu-, Ni-ZSM-5, were compared with those of the parent ZSM-5 by nitrogen adsorption measurements and photoelectron spectroscopy. The treatment of the adsorption isotherms permitted a thorough characterization of the microstructure of the samples. A first estimation of the microporous volume was made by the Dubinin-Radushkevich method. The “t-plot” method was used to determine the external surface and to obtain another estimation of the microporous volume. Effective micropore size distribution was obtained with the Horvath-Kawazoe approach. The Dubinin-Radushkevich method overestimated the microporous volume of the zeolites, in particular when the solid had an important external surface. It is shown that Cu-ZSM-5 had micropore size and micropore size distribution very close to those of ZSM-5, whereas Co-ZSM-5 and Ni-ZSM-5 had lower microporous volumes and larger external surfaces. The external to internal (microporous) surface ratios, r(s), and the mesoporous to microporous volume ratios, r(v), are proposed as practical parameters to classify the solids with respect to their microstructure. ZSM-5, a pure microporous solid, has low values of both r(s) and r(v) parameters. Ni- and Co-ZSM-5 have high r(s) ad r(v) parameters, indicative of some degree of mesoporous character. Cu-ZSM-5 has intermediate characteristics, typical for micro-mesoporous solid. XPS measurements confirmed that copper ions penetrated to a greater extent in the channels of ZSM-5 zeolite than cobalt and nickel ions, which merely deposited on the external surface of ZSM-5 zeolite as oxidic aggregates. (C) 1999 Elsevier Science B.V. All rights reserved.

Keywords: Zeolites, Modified Zeolites, Morphology, Nitrogen Adsorption, Surface Area, Porosity, Pillared Clays, Catalytic Decomposition, Size Distribution, Nitric-Oxide, Adsorption, Nitrogen, Volume

Heinen, A.W., Peters, J.A. and van Bekkum, H. (2000), Competitive adsorption of water and toluene on modified activated carbon supports. *Applied Catalysis A-General*, **194** (SISI), 193-202.

Full Text: [A\App Cat A-Gen194, 193.pdf](A/App%20Cat%20A-Gen194,%20193.pdf)

Abstract: The effect of carbon modifications and oxygen surface groups on the hydrophobicity of activated carbons is described. The hydrophobicity was determined by competitive adsorption of water and toluene vapor. From the breakthrough curves the hydrophobicity index (HI) was determined, which is defined as the adsorbed amount of toluene, relative to the adsorbed amount of water. The adsorption of toluene is only determined by the available pore volume. The water adsorption, however, increases with both the porosity and the amount of acidic surface sites; This is in line with H2 solid state NMR experiments, which showed that the presence of toluene decreases the mobility of water, : either due to a stronger interaction with the surface sites or to an enhanced adsorption in the smallest pores. Ion exchange of the carbons with alkali metals favors the water adsorption. The pore size, compared to the ion size within the series alkali-metal ions, resulted in an optimum hydrophilicity upon Na+ exchange. (C) 2000 Elsevier Science B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Alkali Metal Ions, Carbon, Coal, H2, H2 Solid State NMR, Hydrophobicity, Hydrophobicity Index, Index, Interaction, Ion, IR, Metals, Mobility, Nitric-Acid, NMR, Oxygen, Porosity, Sites, Supports, Titration, Toluene, Water, Water Adsorption

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Full Text: [2000\App Cat A-Gen194, 213.pdf](2000/App%20Cat%20A-Gen194,%20213.pdf)

Abstract: FT infrared spectroscopy (FTIR spectroscopy) has been used to study the adsorption and reactivity of 2-methyl-3-butyn-2-ol (MBOH) on the Surfaces of pure and Cs+ - and Ba+ -modified MEG. It has been found that MBOH is adsorbed via two different mechanisms. Dissociative adsorption at acid-base (M-O) pair-sites with the creation of new H-bonded surface OHs groups is the most favorable adsorption mode in the case of Cs/MgO, This is attributed to the strong Lewis basic sites generated on the catalyst surface upon impregnation with Cs+ cations which facilitate abstraction of hydrogen from MBOH, leading to the formation of alcoholate species. On the other hand, the Ba/MgO catalyst adsorbs MBOH preferentially via interaction with surface hydroxyl groups. Both these adsorption modes are operative on the surface of pure MgO. The acetylenic group is also involved in the adsorption of MBOH. The acidic acetylenic hydrogen interacts with the Lewis basic sites, whereas the Lewis acid sites interact preferably with the acetylenic pi-electron system. With regard to surface reactivity, the catalysts are active towards the decomposition of MBOH to acetone and acetylene, revealing their basic properties. The Cs/MgO catalyst exhibits higher activity than MgO, which appears to be more active than catalysts impregnated with Ba2+ ion. The formation of BaCO3 las detected by X-ray diffractometry (XRD) on the MgO surface may be responsible for this lower activity. It has been found that the reaction product acetone is polymerized rapidly and adsorbed strongly on the surfaces of Ba/MgO, In conclusion, the basicity of this series of catalysts can be ranked as follows: Cs/MgO > MgO > Ba/MgO (C) 2000 Elsevier Science B.V. All rights reserved.

Keywords: 2-Methyl-3-butyn-2-ol, Abstraction, Acetone, Acids, Activity, Adsorption, Basicity, Catalyst, Catalysts, Cesium-Modification of Mgo, Conversion, Creation, Decomposition, FT Infrared Spectroscopy, FTIR, FTIR Spectroscopy, Hydrogen, Hydroxyl, Impregnation, Infrared Spectroscopy, Interaction, Ion, IR, Magnesium Oxide, Mechanisms, MgO, Mo, Oxide, Properties, Reaction, Reactivity, Sites, Solid Base Catalysts, Spectroscopy, Surfaces, XRD, Zeolites

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Full Text: [A\App Cat A-Gen209, 327.pdf](A/App%20Cat%20A-Gen209,%20327.pdf)

Abstract: Oxidation of a monophenol and two *o*-diphenols catalyzed by a novel copper-metallated nucleobase polymeric matrix has been observed. This polymer is insoluble in common organic solvents, and thus, catalysis is heterogeneous in nature. Synthesis and characterization of metallated polymer, kinetic profile of catalytic oxidation of an activated monophenol and *o*-diphenols and catalyst recycling experiments are described.

Keywords: Phenols, Oxidation, Copper, Nucleobase, Polymer

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Full Text: [2001\App Cat A-Gen218, 219.pdf](2001/App%20Cat%20A-Gen218,%20219.pdf)

Abstract: A composite of gamma -zirconium phosphate (gamma -ZrP) and silica (40% in weight of gamma -ZrP) was prepared by hydrolysis of tetraethylsilicate in the presence of exfoliated gamma -ZrP. The exfoliation of gamma -ZrP was obtained in 1:1 (v/v) acetone/water solution at 80°C. The presence of silica prevented the re-aggregation of the exfoliated gamma -ZrP lamellae. After heating at 650°C, the greater part of gamma -ZrP was present in the composite as bilamellar packets of zirconium phosphate acid pyrophosphate while about 20% was transformed into alpha -Zr(O3POH)2. The surface acid P-OH groups of these lamellar species (about 1. 1 meq. g-1) were not destroyed by thermal treatment up to 750°C. The composite exhibited a specific surface area of 421 m2 g-1 of which about 191 m2 g-1 was attributable to exfoliated lamellae of zirconium phosphate.

The catalytic properties of the composite were preliminarily investigated for the conversion of ethylbenzene to styrene at different temperatures and different EB/O(air) ratios as a function of the contact time. The results are compared with pure gamma -ZrP calcined at 650°C. Catalytic activity was strongly influenced by the total amount of the surface acidic groups of the samples. The gamma -ZrP/SiO2 composite showed a higher conversion rate (about five times) than calcined gamma -ZrP. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Zirconium, Phosphate Catalysis, Oxidative Dehydrogenation, Ethylbenzene, Isomerization, Dehydration, Hydrogen

Notes: highly cited

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Full Text: [2001\App Cat A-Gen222, 101.pdf](2001/App%20Cat%20A-Gen222,%20101.pdf)

Abstract: Ionic liquids are low melting point salts that represent an exciting new class of reaction solvents for catalysis. Being composed entirely of ions, they possess negligible vapour pressures, and the wide range of possible cations and anions means that other solvent properties may be easily controlled. There is currently great interest in the use of these materials as solvents for a wide range of applications, including catalysis. Many reactions show advantages when carried out in ionic liquids, either with regard to enhanced reaction rates, improved selectivity, or easier reuse of catalysts. This review is intended to bring the reader up to date on the developments involving ionic liquids in catalytic applications over the previous 18 months. Recent spectroscopic investigations into the solvent properties of ionic liquids with relevance to catalysis are discussed first, followed by a critical review of the major developments in transition metal, Lewis acid, and enzyme catalysed processes in these solvents. Particular emphasis is given to the combination of ionic liquids with supercritical fluids, Pd-based catalysts, and enzymes. Wherever possible, the results gained in ionic liquids are critically compared with those obtained using other catalytic systems. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Ionic Liquids, Biphasic Catalysis, Pd Catalysis, Supercritical Fluids, Lewis Acid Catalysis, Biocatalysis, Diels-Alder Reactions, Temperature Molten-Salts, Friedel-Crafts Reactions, C Coupling Reactions, Heck Reaction, Aromatic-Compounds, Organic-Solvents, Complexes, System, Hydrogenation

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Full Text: [2001\App Cat A-Gen222, 427.pdf](2001/App%20Cat%20A-Gen222,%20427.pdf)

Abstract: Gold catalysts have recently been attracting rapidly growing interests due to their potential applicabilities to many reactions of both industrial and environmental importance. This article reviews the latest advances in the catalysis research on Au. For low-temperature CO oxidation mechanistic arguments are summarized, focusing on Au/TiO2 together with the effect of preparation conditions and pretreatments. The quantum size effect is also discussed in the adsorption and reaction of CO over Au clusters smaller than 2 nm. in diameter. In addition, recent developments are introduced in the epoxidation of propylene, water-gas-shift reaction, hydrogenation of unsaturated hydrocarbons, and liquid-phase selective oxidation. The role of perimeter interface between Au particles and the support is emphasized as a unique reaction site for the reactants adsorbed separately, one on Au and another on the support surfaces. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Gold Catalysts, CO Oxidation, Propylene Epoxidation, Water-Gas-Shift Reaction, Hydrogenation, Liquid-Phase Oxidation, Supported Gold Catalysts, Low-Temperature Oxidation, Liquid-Phase Oxidation, Gas Shift Reaction, CO Oxidation, Carbon-Monoxide, Au/TiO2 Catalysts, Selective Oxidation, Adsorption, Titanium

Notes: highly cited

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Full Text: [2005\App Cat A-Gen289, 186.pdf](2005/App%20Cat%20A-Gen289,%20186.pdf)

Abstract: Titanium dioxide/carbon nanotubes (TiO2/CNTs) composites were prepared with the aid of ultrasonic irradiation. Products of different TiO2:CNTs molar ratio were characterized by X-ray diffraction (XRD), Raman spectroscopy, X-ray photoelectron spectroscopy (XPS), scanning electron microscopy (SEM), Brunauer-Emmett-Teller (BET) adsorption analysis, thermogravimetric and differential thermal analysis (TGA-DSC), photoluminescence (PL) and UV-vis spectroscopy measurements (UV-vis). The photocatalytic activity was evaluated by the degradation of acetone and by the detection of the hydroxyl radical (-OH) signals using electron paramagnetic resonance (EPR), It is found that the crystalline TiO2 is Composed of both anatase and brookite phases. The agglomerated morphology and the particle size of TiO2 in the composites change in the presence of CNTs. The CNTs in the composites are virtually all covered by TiO2. Other than an increase of the surface area, the addition of CNTs does not affect the mesoporous nature of the TiO2. Meanwhile, more hydroxyl groups are available on the surface of the composite than in the case of the pure TiO2. The higher the content of CNTs, there is more effective in the suppression of the recombination of photo-generated e(-)/h(+) pairs. However, excessive CNTs also shield the TiO2 from absorbing UV light. The optimal amount of TiO2 and CNTs is in the range of 1:0.1 and 1:0.2 (feedstock molar ratio). These samples have much more highly photocatalytic activity than P25 and TiO2/activated carbon (AC) composite. The mechanism for the enhanced photocatalytic activity of TiO2 by CNTs is proposed. (c) 2005 Elsevier B.V. All rights reserved.

Keywords: Carbon Nanotubes, Photocatalytic Activity, Organic Pollutant, TiO2, Sonochemistry, Enhancement, Hydroxyl Radical, Thin-Films, Calcination Temperature, Raman-Spectroscopy, Charge-Transfer, Nanoparticles, Degradation, Adsorption, Supports, Phase, Photodegradation

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Full Text: [2005\App Cat A-Gen295, 106.pdf](2005/App%20Cat%20A-Gen295,%20106.pdf)

Abstract: The performance of Fe-ZSM-5 catalysts (prepared by incipient wetness, 0.5-2.5% of Fe) for benzylation of benzene by benzyl chloride was studied in this work and explained in terms of their chemical and adsorption properties. Catalysts were characterised by ICP-MS, XPS, XRD, nitrogen physisorption and calorimetry (in order to determine their surface acidity). Adsorption properties of the catalysts (for the reactants and products) have been studied by inverse gas chromatography (IGC). Enthalpies of adsorption, dispersive energies of adsorption, and specific interaction were selected as parameters to characterise the interaction of benzene, benzyl chloride and diphenylmethane with the studied catalysts. Reaction experiments, carried out in an isothermal batch reactor, showed that increasing amounts of iron lead to more active catalyst, but less selective for the formation of diphenylmethane. Experimental data were modelled considering a serial-parallel scheme. Results reported in this paper, suggest that the reaction is controlled by the adsorption and activation of the benzyl chloride. The addition of iron to the ZSM-5 zeolite largely increases the interaction between this compound and the catalyst surface. (c) 2005 Elsevier B.V. All rights reserved.

Keywords: Acidity, Activity, Adsorption, Adsorption Properties, Alkylation, Alumina, Aromatics, Benzene, Benzylation of Benzene, Calorimetry, Catalyst, Catalysts, Chemical, Chloride, Chromatography, Crafts-Type Benzylation, FE-ZSM-5, Gas Chromatography, H-Beta, ICP-MS, Interaction, Inverse Gas Chromatography, Inverse Gas-Chromatography, Iron, Lead, Microcalorimetry, Nitrogen, Paper, Parameters, Performance, Products, Properties, Reaction, Reactor, Selective, XPS, XRD, Zeolite

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Full Text: [2006\App Cat A-Gen310, 1.pdf](2006/App%20Cat%20A-Gen310,%201.pdf)

Abstract: The hydrogen-palladium system has been the subject of much study, both experimentally and computationally. In this review article the authors have set out to draw a comparison between the experimentally determined thermodynamic data for this system and the calculated energies, in order to attempt to bridge the gap between computational chemistry and experimental work and so gain insight into the absorption and adsorption of hydrogen on palladium. Rigorous thermodynamic analysis of the data for the absorption of hydrogen into palladium metal shows that although constant volume measurements have been made, the analysis that has been applied in the literature in several instances is valid only for a constant pressure system. Re-analysis of the data has lead to a heat of formation for beta-palladium hydride which is not a function of composition and a weak function of temperature. Values for the internal energy of absorption of -36.7, -35.2 and -34.4 kJ/mol of H-2 were obtained at 0 degrees C and in the temperature ranges from 200 to 313 degrees C and from 366 to 477 T, respectively. There is a good agreement between these values and the calculated values. The implicit assumptions that underpin the integrated form of the Clausius-Clapeyron equation are that an isobaric system is being analyzed, and that the enthalpy is not a function of composition or temperature. Since heat of adsorption is known to be a function of surface coverage and is generally measured in a constant volume system, the application of the integrated Clausius-Clapeyron equation to determine the enthalpy of adsorption as a function of surface coverage has been questioned and an alternative thermodynamic analysis has been proposed that enables one to calculate the differential change in internal energy of adsorption with surface coverage. It has been found that the internal energy of adsorption varies with increasing surface coverage in a similar manner to the way in which internal energy varies as two atoms approach each other. It is noted that the variation in internal energy with surface coverage (0.1<theta<0.94) calculated in this work is of the order of 100 J/mol, while the heat of adsorption in the literature is of the order of -87,000 J/mol. Thus, except at very high coverages, the change in internal energy or enthalpy of adsorption with changes in surface coverage is very small compared to the overall heat of adsorption. The computationally determined energies of adsorption do not reflect this trend and appear to under estimate the electrostatic repulsion (or over estimate the attraction) between gas phase molecules and atoms that are already adsorbed on the surface for this system. (C) 2006 Elsevier B.V. All rights reserved.

Keywords: 111 Surface, Absorption, Adsorption, Analysis, Chemisorption, Comparison, Diffraction, Diffusion, Direct Subsurface Absorption, Equilibrium, Experimental and Computational Determination of Heat of Adsorption, H-2, Heat of Absorption, Hydrogen Adsorbed On Palladium, Lead, Literature, Molecules, Palladium, Palladium Hydride, Pd(III), Pressure, Pressures, Surface Coverage, System, Temperature, Thermodynamic, Thermodynamic Analysis, Trend, Volume, X-Ray

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Full Text: [2006\App Cat A-Gen313, 115.pdf](2006/App%20Cat%20A-Gen313,%20115.pdf)

Abstract: The commercially available TiO2-catalyst (Degussa P25) was supported by spray pyrolysis deposition method on the outer surface of the quartz tubes, incorporated in photocatalytic reactor. The crystal structure and the morphology of the films were studied. The immobilized TiO2 is modified with nanosized gold particles by the photoreduction method to obtain different noble metal loading (0.05-0.4 wt.%). The characterization of the synthesized catalysts was carried out by the BET method, X-ray photoelectron spectroscopy (XPS), SEM, TEM and the adsorption of the model pollutant was determined. The degradation of oxalic acid has been studied in aqueous solution photocatalyzed by band-gap-irradiated TiO2, modified with nanosized gold particles. The presence of low amounts of gold on the TiO2 surface leads to an increase of its photocatalytic activity. The maximum value of the photocatalytic activity was registered with the approximate to 0.16 wt.% Au on TiO2 sample. At this concentration the activity of the Au-modified TiO2 is approximately double that of the semiconducting support. The adsorption properties of the catalysts, as well as the noble metal content on the surface of the support, influence the efficiency of the photocatalytic process. The reaction rate of photocatalytic degradation of the oxalic acid follows a zero kinetic order according to the Langmuir-Hinshelwood model. (c) 2006 Elsevier B.V. All rights reserved.

Keywords: Gold, TiO2, Spray Pyrolysis, Photocatalytic Decomposition, Oxalic Acid, XPS, TEM, Organic-Compounds, Titanium-Dioxide, Visible-Light, Oxidation, Photooxidation, Platinum, Silver, Water, Cu(II)-Phthalocyanine, Photodeposition

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Full Text: [2008\App Cat A-Gen345, 28.pdf](2008/App%20Cat%20A-Gen345,%2028.pdf)

Abstract: A mathematical model of the electrocatalytic hydrogenation of phenol on a Pd/Al2O3 (10%, W/W) Catalyst is developed and presented from the chemical kinetic to the fluid mechanical point of view in a laboratory scale cell. The model includes the heterogenous electrochemical steps at the microscopic scale, integrated in a full transient, three-dimensional representation of the fluid mechanics and species concentration in the electrochemical cell. In this reactor, the catalytic particles are dispersed and recirculated in the solution. The brief contact of the powder with a porous reticulated vitreous carbon is sufficient to obtain adsorbed hydrogen on the nanoaggregates who contains the phenol adsorbed. The isotherm of Langmuir and the pseudo-second-order model, based on assumption of second-order mechanism are developed. The aim of this work is to understand and validate the pseudo-second-order adsorption model when used with hydrogen adsorption isotherm, and to develop a full model of the electrochemical cell. The proposed model could be used to improve the design of industrial scale reactors. The model is validated using experimental results from [A. Bannari, C. Cirtiu, F. Kerdouss, P. Proulx, H. Menard, Chem, Eng. Process. 45 (2006) 471]. Crown Copyright (C) 2008 Published by Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Adsorption, Adsorption Isotherm, Aqueous-Solution, Bubble-Size, Carbon, Catalysis Electrocatalytic Hydrogenation (ECH), Catalyst, Computational Fluid Dynamics (CFD), Concentration, Diffusion, Dynamic Cell, Electrochemical-Cell, Experimental, Hydrogen, Hydrogen Adsorption Isotherm, Isotherm, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Mathematical Model, Mechanism, Model, Modeling, Multiphase Flow, P, Particles, Phenol, Porous Media, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Representation, Rights, Second Order, Second-Order, Solution, Sorption, Stirred-Tank, Three-Dimensional, Transient, Tree Fern, Work

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Zhang, F., Zhao, J., Shen, T., Hidaka, H., Pelizzetti, E. and Serpone, N. (1998), TiO2-assisted photodegradation of dye pollutants. II. Adsorption and degradation kinetics of eosin in TiO2 dispersions under visible light irradiation. *Applied Catalysis B-Environmental*, **15** (1-2), 147-156.

Full Text: [A\App Cat B-Env15, 147.pdf](A/App%20Cat%20B-Env15,%20147.pdf)

Abstract: The TiO2-assisted photodegradation of anionic eosin has been examined in TiO2 aqueous dispersions under illumination by visible light. Eosin is easily decomposed photochemically by visible light in the presence of TiO2 particles. The degradation kinetics followed a Langmuir-Hinshelwood type equation. The rate was greater in acid media than in neutral and alkaline media, which correlates with the adsorption behavior of eosin on the TiO2 surface. Adsorption of eosin is a prerequisite for the TiO2-assisted photodegradation. The evolution of CO2 occurred concomitantly with the photodegradation of eosin. A plausible mechanism of degradation is discussed. (C) 1998 Elsevier Science B.V.

Keywords: Colloidal TiO2, Semiconductor, Surfactants, Photosensitization, Photocatalysis, Photooxidation, Electron, Events, Oxygen, Titania, Photodegradation, Dye

Notes: highly cited

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Full Text: [1999\App Cat B-Env23, 89.pdf](1999/App%20Cat%20B-Env23,%2089.pdf)

Abstract: The presence of transition metal ions in photocatalytic reactions is reviewed according to two main approaches: (a) the influence of transition metal ions on the rate of photocatalytic reactions (mainly oxidation) and (b) the transformation of the ions to less toxic species or their deposition on the semiconductor catalyst surface for recovery of expensive and useful metals. Most of the proposed mechanisms are discussed, together with experimental physicochemical evidences that support the involved pathways. Practical applications related to environmental protection and industrial processes are described. (C) 1999 Elsevier Science B.V. All rights reserved.

Keywords: Aqueous TiO2 Suspensions, Cadmium-Sulfide, Dissolved Copper Ions, Metal Ions, Oxidation, Photo-Reduction, Photocatalysis, Photoelectrochemical Deposition, Semiconductor Catalysts, Semiconductors, Silver Salt-Solutions, Single-Crystals, TiO2, Titanium-Dioxide Suspensions, Transition Metal Ions, Visible-Light

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Full Text: [2001\App Cat B-Env30, 111.pdf](2001/App%20Cat%20B-Env30,%20111.pdf)

Abstract: Hydrogenation of nitrate to nitrogen using Pd, Al2O3 catalysts promoted by a second metal offers a promising process for nitrate removal in drinking water treatment. This study was aimed to elucidate the nature and function of promoting tin species in PdSn, Al2O3 catalysts obtained in different preparation routes. On one hand, a parent Pd, Al2O3 catalyst was doped via impregnation with aqueous solutions of SnCl2 of different concentrations. On the other hand, the palladium surface of the same parent Pd, Al2O3 catalyst was modified via controlled surface reaction (CSR) with hexane solutions of Sn(C4H9)4. The structure of the different PdSn, Al2O3 catalysts was investigated by Sn-119-Mossbauer spectroscopy and by means of various chemisorption techniques (static and pulse chemisorption of H2 or CO, measurement of the differential heat of CO chemisorption, FTIR spectroscopy of CO chemisorption). Catalytic properties were studied in batch experiments under atmospheric pressure. Promoting of the Pd, Al2O3 catalyst by CSR resulted in catalysts with a significantly higher activity compared to PdSn, Al2O3 catalysts obtained via incipient wetness method. Obviously, Sn(II)-species being present in the latter in high portion inhibit the nitrate reduction on bimetallic PdSn ensembles. CO chemisorption reflected a ‘palladium site blocking’ by tin species in both kinds of catalysts and indirectly indicated the generation of palladium-tin ensembles. in case of the CSR preparation the palladium is alloyed by metallic tin. The palladium surface is diluted by tin atoms, i.e. bimetallic PdSnx ensembles are generated which are able to adsorb and activate nitrate ions. There is an optimum of tin loading, i.e. the activity decreases and the undesired ammonium production in a site reaction increases when the surface becomes too tin rich. Sn(II) species, being preferentially present in catalysts obtained by SnCl2 impregnation also strongly modify the chemisorption properties of the palladium surface, but obviously these species inhibit the nitrate reduction on the bimetallic PdSn ensembles, which are also present in these catalysts. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Bimetallic Catalysts, Bimetallic Catalysts, Characterization, Drinking Water, Drinking Water Treatment, Hydrogenation, Membranes, Nitrate Hydrogenation, Nitrate Removal, Nitrite Removal, Palladium-Tin Interactions, Reduction, Support Catalysts

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Full Text: [2002\App Cat B-Env36, 45.pdf](2002/App%20Cat%20B-Env36,%2045.pdf)

Abstract: The photocatalytic oxidation of an azo-dye acid black 1 (AB1) in water has been investigated over modified titanium dioxide (Tytanpol A11, “Police” Chemical Factory, Poland). The effect of operational parameters, i.e. pH of the solution, photocatalyst content, initial dye concentration on the photocatalytic process has been examined. It can be stated that the complete removal of color, after selection of optimal operational parameters, using modified Tytanpol A11 can be achieved in relatively short time, about 1 h. The catalytic material has been characterized by several analytical methods, like XRD, FTIR, UV-VIS/DRS. (C) 2002 Elsevier Science B.V. All rights reserved.

Keywords: Photocatalytic Oxidation, Modified Titanium Dioxide, Azo-Dye, Purification, Degradation

Venkatapathy, R., Bessingpas, D.G., Canonica, S. and Perlinger, J.A. (2002), Kinetics models for trichloroethylene transformation by zero-valent iron. *Applied Catalysis B-Environmental*, **37** (2), 139-159.

Full Text: [A\App Cat B-Env37, 139.pdf](A/App%20Cat%20B-Env37,%20139.pdf)

Abstract: Five models that account for experimental observations of kinetics and surface properties during trichloroethylene (TCE) transformation by iron were compared in terms of accuracy in fitting sixteen TCE concentration versus time profiles obtained from the literature. The models were based on Henri-Michaelis-Menten, Langmuir-Hinshelwood-Hougen-Watson (HMM, LHHW) kinetics and considered sorption to inactive sites, sorption and reaction at multiple binding energy sites, and catalyst deactivation in increasing order of complexity. The internal and overall effectiveness factors for all datasets were one, indicating that TCE transformation kinetics were not mass transfer limited during the initial stages of the reaction. At low TCE loading, model results suggest that the overall transformation is reaction limited. At high TCE loading however, the overall transformation appears to be sorption limited due to competitive self-inhibition of TCE on the iron surface. Model results suggest that the addition of an exponential decay term that describes catalytic deactivation best described reaction kinetics under widely different experimental conditions. Model results also suggest that TCE adsorbs to two adjacent sites, and that concentrations of active and inactive sites and TCE loading (TCE concentration per active site) are the dominant factors that control TCE transformation kinetics. The results also suggest that in experiments initiated in the zero-order region, the order of the reaction may change to first-order and then back to zero-order as the reaction progresses due to a decrease in active site concentration as the catalytic surface is deactivated. Comparisons of fitted and reported model parameters suggest that specific surface area of iron from BET isotherms may not provide a true representation of the actual number of sites on the iron surface. (C) 2002 Elsevier Science B.V. All rights reserved.

Keywords: Catalysis, Dechlorination, Degradation, Energy, Groundwater, Kinetic Model, Metals, Order, Reductive Dehalogenation, Sorption, Sorption, Surface, Surface Reaction, Tce, Trichloroethylene, Water

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Full Text: [A\App Cat B-Env43, 371.pdf](A/App%20Cat%20B-Env43,%20371.pdf)

Abstract: Kinetic and thermodynamic analyses of catalytic hydrodechlori nations in supercritical carbon dioxide (SC-M) were performed using 5% Pd supported on gamma-Al2O3. The selected standard compounds used for the study represented chlorinated wood resins commonly found in pitch deposits; 1-chlorooctadecane (C- 18-Cl), 9,10-dichlorostearic acid (Stearic-O-2), and 12,14- dichlorodehydroabietic acid (DHA-Cl-2). The reaction utilized isopropanol as a hydrogen donor. Pressure, temperature, and the concentrations of isopropanol and palladium were varied to study the effect of each parameter and to optimize the dechlorination yield. The reaction in SC-CO2 was compared to the one in liquid solvents at atmospheric pressure. By applying a Langmuir-Hinshelwood kinetic model, the rate-determining step of the reaction was deduced to be adsorption of the chlorinated molecules on the palladium surface. The apparent activation energies of the reactions for C-18-Cl, Stearic-Cl-2, DHA-Cl-2 were 43±7 40±7, and 135±7 mol-1, respectively, in SC-CO2. The relatively high activation energy for DHA-Cl-2 was apparently due to structural differences from the other two compounds. The apparent activation energy of dechlorination of C18-Cl in liquid isopropanol at atmospheric pressure was determined to be 35± 3 kJ mol-1, leading to the conclusion that the rate-deter-mining step is the same for this compound in both fluid systems. The enthalpies of desorption of stearic acid and dehydroabietic acid were determined to be 18±2 and 12±2 kJ mol-1, respectively. These values being less than half of the apparent activation energies of dechlorination of their corresponding chlorinated compounds indicates that desorption of the dechlorinated products is not the rate-determining step of the reaction. This was consistent with the conclusion that the rate-determining step is adsorption, on the understanding that the reaction mechanism is same in both fluid systems. (C) 2003 Elsevier Science B.V. All rights reserved.

Keywords: Acetone Extraction, Carbon Dioxide, Catalytic Hydrodechlorination, Dechlorination, Fatty, Mild Conditions, Noble-Metal Catalysts, Phase Extraction, Pitch Deposits, Supercritical Fluids, Wood

Notes: highly cited

? Li, F.B., Li, X.Z. and Hou, M.F. (2004), Photocatalytic degradation of 2-mercaptobenzothiazole in aqueous La3+-TiO2 suspension for odor control. *Applied Catalysis B-Environmental*, **48** (3), 185-194.

Full Text: [2004\App Cat B-Env48, 185.pdf](2004/App%20Cat%20B-Env48,%20185.pdf)

Abstract: The La3+- TiO2 photocatalysts were prepared by doping lanthanum ion into TiO2 structure in a sol-gel process. The catalyst samples were then characterized by XRD and XPS analyses. The analytical results demonstrated that the lanthanum doping could inhibit the phase transformation of TiO2 and enhance the thermal stability of TiO2 structure. In addition, it was found that the lanthanum doping could reduce the crystallite size and increase the Ti3+ content on the surface of the catalysts with the increase of lanthanum doping. With a purpose of odor control, 2-mercaptobenzothiazole (MBT) was used in this study as a model chemical and both the adsorption isotherm and photocatalytic activity of the La3+- TiO2 catalysts were evaluated based on the MBT photodegradation in aqueous solution. The experimental results showed that both the adsorption capacity and adsorption equilibrium constants of the La3+- TiO2 catalysts increased with an increase of lanthanum doping. The kinetics of the MBT photodegradation using different La3+- TiO2 catalysts was also studied. The experiments demonstrated that an optimum doping of lanthanum ion at 1.2% achieved the highest MBT photodegradation rate. It was concluded that the enhancement of MBT photodegradation using the La3+- TiO2 catalysts mainly involved in both the improvement ofthe organic substrate adsorption in catalysts suspension and the enhancement of the separation of electron-hole pairs owing to the presence of Ti3+. (C) 2003 Elsevier B.V. All rights reserved.

Keywords: 2-Mercaptobenzothiazole, Photocatalysts, Odor Control, Waste-Water Treatment, Titanium-Dioxide Photocatalysts, TiO2 Nanocrystalline Electrodes, Enhanced Degradation, Nanoparticles, Photoreactivity, System, Acid

Akyol, A., Yatmaz, H.C. and Bayramoglu, M. (2004), Photocatalytic decolorization of Remazol Red RR in aqueous ZnO suspensions. *Applied Catalysis B-Environmental*, **54** (1), 19-24.

Full Text: [A\App Cat B-Env54, 19.pdf](A/App%20Cat%20B-Env54,%2019.pdf)

Abstract: The photocatalytic decolorization of aqueous solutions of Remazol Red RR, a commercial azo-reactive textile dye, in the presence of various semiconductor powder suspensions has been investigated in a quartz batch reactor with the use of artificial light sources (UV-C). ZnO and TiO2 have been found the most active photocatalysts; however ZnO indicated slightly higher efficiency. The effects of various process variables on decolorization performance of the process have been investigated. The results showed that the decolorization efficiency increases with increase in pH, attaining maximum value at pH 10 for ZnO. The zero-point charge for ZnO is 9.0 above which ZnO surface is negatively charged by adsorbed OH− ions, favoring the formation of strong oxidant OH. radicals. The efficiency is inversely related to the dye concentration; increasing dye concentration enhances dye adsorption on the active sites of the catalyst surface, and consequently hinders OH− adsorption on the same sites, this results with a decreasing OH. formation rate.

Keywords: Photocatalysis, Decolorization, Azo-Reactive Dye, Zno, TiO2, Textile

Azevedo, E.B., Neto, F.R.D. and Dezotti, M. (2004), TiO2-photocatalyzed degradation of phenol in saline media: Lumped kinetics, intermediates, and acute toxicity. *Applied Catalysis B-Environmental*, **54** (3), 165-173.

Full Text: [A\App Cat B-Env54, 165.pdf](A/App%20Cat%20B-Env54,%20165.pdf)

Abstract: The photocatalytic degradation of phenol in aqueous suspensions of TiO2 under different salt concentrations has been investigated. In all cases, complete removal of phenol and mineralization degrees above 90% were achieved. However, the time needed to effectively remove phenol and degrade organics was considerably increased in high salinity medium. The photodegradation of the organics followed a Lanamuir-Hinshelwood-Hougen-Watson lumped kinetics, showing rate and adsorption/desorption constants that decrease as salinity increases. From GUMS analyses, various hydroxylated intermediates formed during oxidation have been identified. The main ones were catechol, hydroquinone, and 4.4’-dihydroxybiphenyl, in this order. It was shown that salinity inhibited catechol formation and promoted 4,4-dihydroxybiphenyl production. The formation of negligible concentrations of 4-chlorophenol was observed only in high salinity medium. Acute toxicity during degradation process was determined by using Artemia sp. as the test organism, which is suited for saline environments. Intermediate products were all less toxic than phenol and a significant removal of the overall toxicity was accomplished, regardless of the salt concentration.

Photocatalytic phenol degradation in the absence of salt and in low salinity media (2 g L-1) was quite the same (100% for a 150 min irradiation time). However, high salinity media (50 g L-1) showed a significant difference (81%). Organic matter mineralization showed a similar behavior regarding the media (94 and 44%, respectively). (C) 2004 Elsevier B.V. All rights reserved.

Keywords: TiO2, Photocatalysis, Oxidation, Phenol, Lumped Kinetics, Saline, Intermediates, Acute Toxicity, Aqueous TiO2 Suspensions, Photocatalytic Degradation, Titanium-Dioxide, Heterogeneous Photocatalysis, Semiconductor Photocatalysis, Water, Oxidation, Photodegradation, Trichloroethylene, Mechanisms

Notes: highly cited

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Full Text: [2005\App Cat B-Env56, 9.pdf](2005/App%20Cat%20B-Env56,%209.pdf)

Abstract: The mass production of proton exchange membrane (PEM) fuel-cell-powered light-duty vehicles requires a reduction in the amount of Pt presently used in fuel cells. This paper quantifies the activities and voltage loss modes for state-of-the-art MEAs (membrane electrode assemblies), specifies performance goals needed for automotive application, and provides benchmark oxygen reduction activities for state-of-the-art platinum electrocatalysts using two different testing procedures to clearly establish the relative merit of candidate catalysts. A pathway to meet the automotive goals is charted, involving the further development of durable, high-activity Pt-alloy catalysts. The history, status in recent experiments, and prospects for Pt-alloy cathode catalysts are reviewed. The performance that would be needed for a cost-free non-Pt catalyst is defined quantitatively, and the behaviors of several published non-Pt catalyst systems (and logical extensions thereof), are compared to these requirements. Critical research topics are listed for the Pt-alloy catalysts, which appear to represent the most likely route to automotive fuel cells. (C) 2004 Elsevier B.V. All rights reserved.

Keywords: Oxygen Reduction Catalysts, Non-Platinum Catalysts, Platinum-Cobalt Catalyst, Polymer Electrolyte Membrane Fuel Cell, Particle Size Effect, PEFC, Electrolyte Fuel-Cells, Single-Crystal Surfaces, Disk Electrode, O2 Reduction, Platinum, Electrocatalysis, Kinetics, Acid, Pyrolysis, Fe

? Kusvuran, E., Samil, A., Atanur, O.M. and Erbatur, O. (2005), Photocatalytic degradation kinetics of di- and tri-substituted phenolic compounds in aqueous solution by TiO2/UV. *Applied Catalysis B-Environmental*, **58** (3-4), 211-216.

Full Text: [2005\App Cat B-Env58, 211.pdf](2005/App%20Cat%20B-Env58,%20211.pdf)

Abstract: In this study, photocatalytic degradation of 2,4,6-trimethylphenol (TMP), 2,4,6-trichlorophenol (TCP), 2,4,6-tribromophenol (TBP), 2,4-dimethylphenol (DMP), 2,4-dichlorophenol (DCP) and 2,4-dibromophenol (DBP) has been studied by TiO2/UV. Although degraded phenolic compound concentration increased by increasing initial concentration photocatalytic decomposition rates of di- and tri-substituted phenols at 0.1-0.5 mM initial concentrations decreased when the initial concentration increased. The fastest degradation observed for TCP and the slowest for TMP. Photodegradation kinetics of the compounds has been explained in terms of Langmuir-Hinshelwood kinetics model. Degradation rate constants have been observed to be extremely depended on electronegativity of the substituents on phenolic ring. Degradation rate constant and adsorption equilibrium constant of TCP were calculated as k0.0083 mM min-1 and K9.03 mM-1. For TBP and TMP the values of k and K were obtained as 0.0040 mM min-1 19.20mM-1, and 0.0017 mM min-1, 51.68 mM-1 respectively. Degradation rate constant of DBP was similar as DCP (0.0029 mM min-1 for DBP and 0.0031 mM min-1 for DCP) whereas adsorption equilibrium constants differed (48.40 mM-1 for DBP and 30.52 mm-1 for DCP). K and k of DMP found as 83.68 mM-1 and 0.0019 mM min-1, respectively. The adsorption equilibrium constants in the dark were ranged between 1.11 and 3.28 mM-1 which are lower than those obtained in kinetics. Adsorption constants have inversely proportion with degradation rate constants for all phenolic compounds studied. &COPY; 2004 Elsevier B.V. All rights reserved.

Keywords: Titanium Dioxide, Photocatalytic Degradation, Substituted Phenols, Kinetics, Advanced Oxidation Processes, UV-Irradiation, Azo-Dye, Suspensions; Waste

Notes: highly cited

? Ren, W.J., Ai, Z.H., Jia, F.L., Zhang, L.Z., Fan, X.X. and Zou, Z.G. (2007), Low temperature preparation and visible light photocatalytic activity of mesoporous carbon-doped crystalline TiO2. *Applied Catalysis B-Environmental*, **69** (3-4), 138-144.

Full Text: [2007\App Cat B-Env58, 138.pdf](2007/App%20Cat%20B-Env58,%20138.pdf)

Abstract: A visible-light-active TiO2 photocatalyst was prepared through carbon doping by using glucose as carbon source. Different from the previous carbon-doped TiO2 prepared at high temperature, our preparation was performed by a hydrothermal method at temperature as low as 160 degrees C. The resulting photocatalyst was characterized by XRD, XPS, TEM, nitrogen adsorption, and UV-vis diffuse reflectance spectroscopy. The characterizations found that the photocatalyst possessed a homogeneous pore diameter about 8 nm and a high surface area of 126 m(2)/g. Comparing to undoped TiO2, the carbon-doped TiO2 showed obvious absorption in the 400-450 nm range with a red shift in the band gap transition. It was found that the resulting carbon-doped TiO2 exhibits significantly higher photocatalytic activity than the undoped counterpart and Degussa P25 on the degradation of rhodamine B (RhB) in water under visible light irradiation (lambda > 420 nm). This method can be easily scaled up for industrial production of visible-light driven photocatalyst for pollutants removal because of its convenience and energy-saving. (c) 2006 Elsevier B.V. All rights reserved.

Keywords: Photocatalysis, Titanium Dioxide, Degradation, Preparation, Low Temperature, Titanium-Dioxide, Heterogeneous Photocatalysis, Sensitive Photocatalyst, Nanoparticles, Irradiation, Degradation, Systems, Powders, Spheres, Rutile

? Páez, C.A., Lambert, S.D., Poelman, D., Pirard, J.P. and Heinrichs, B. (2011), Improvement in the methylene blue adsorption capacity and photocatalytic activity of H2-reduced rutile-TiO2 caused by Ni(II)porphyrin preadsorption. *Applied Catalysis B-Environmental*, **106** (1-2), 220-227.

Full Text: [2011\App Cat B-Env106, 220.pdf](2011/App%20Cat%20B-Env106,%20220.pdf)

Abstract: H(2)-reduced rutile-TiO(2) xerogel (Ti-700), obtained via the sol-gel process, was found to strongly adsorb the Ni(II)-5,10,15,20-tetrakis(4-carboxyphenyl)-porphyrin (NiTCPP) from a methanolic solution, despite its very low specific surface area (S(BET) approximate to 2 m2 g-1). UV/vis spectroscopy analysis showed that after calcination at 700ºC and reduction under H(2) flow at 400ºC, the TiO2-xerogel increased its NiTCPP-adsorption capacity by surface area unit by up to 120 times. The effect of the porphyrin presence in the catalytic performances of TiO2-xerogels was studied through three kinetics models: (i) the pseudo-first-order kinetic model; (ii) the pseudo-second-order kinetic model, which are used to describe the adsorption rate based on the adsorption capacity of the catalysts; and (iii) the Langmuir-Hinshelwood kinetic model which is used to describe the photocatalytic degradation rate of methylene blue (MB). A significant improvement in the efficiency of Ti-700 was observed after the porphyrin-adsorption process (NiTCPP/Ti-700): MB-adsorption capacity at equilibrium and the apparent MB-photoconversion constant, k(app), of NiTCPP/Ti-700 were both up to 2 times higher than those observed for the Ti-700. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Degradation, Derivatives, Doped TiO2, Dye-Sensitized TiO2, Equilibrium, Kinetic, Kinetic Model, Kinetics, Mb Adsorption, Methylene Blue, Methylene Blue Photodegradation, Ni(II)-Porphyrin, Phase, Porphyrins, Reduced TiO2, Rutile, Sol-Gel, Sol-Gel Process, Solar-Cells, Surface, Titanium, Visible Irradiation, Visible-Light Irradiation

# Title: Applied Clay Science

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Das, N.C. and Bandyopadhyay, M. (1991), Removal of lead by vermiculite medium. *Applied Clay Science*, **6** (3), 221-231.

Full Text: [A\App Cla Sci6, 221.pdf](A/App%20Cla%20Sci6,%20221.pdf)

Abstract: Mineral-water interaction experiments involving vermiculite and solutions containing lead under different conditions have been carried out to study the metal adsorption properties of vermiculite. The batch sorption kinetics can be described by a first-order reversible reaction and equilibria follow the Freundlich adsorption isotherm. The uptake of lead is a function of pH of the suspending medium and is maximal at pH 6. The increase of ionic strength with KNO3 in solution decreases the sorption of lead. Lead-spiked tap water yields poor results in a fixed bed vermiculite column compared to lead-spiked distilled water.

Viraraghavan, T. and Kapoor, A. (1995), Adsorption of mercury from wastewater by bentonite. *Applied Clay Science*, **9** (1), 31-49.

Full Text: [A\App Cla Sci9, 31.pdf](A/App%20Cla%20Sci9,%2031.pdf)

Abstract: The potential of bentonite for adsorbing mercury from wastewater was studied. Batch kinetic and batch isotherm studies were carried out to determine the effect of contact time, pH and temperature on adsorption. It was found that a contact time of four hours was necessary for the adsorption to reach equilibrium. The optimum pH for adsorption was found to be between 3.0 and 3.5. The adsorption data were described by Freundlich isotherm (except at 21°C) and BET models. The adsorption process was found to be endothermic in nature.

? Kahr, G. and Madsen, F.T. (1995), Determination of the cation exchange capacity and the surface area of bentonite, illite and kaolinite by methylene blue adsorption. *Applied Clay Science*, **9** (5), 327-336.

Full Text: [1995\App Cla Sci9, 327.pdf](1995/App%20Cla%20Sci9,%20327.pdf)

Abstract: Dye cations like methylene blue will mainly adsorb on clay minerals by cation exchange. Therefore, the methylene blue adsorption is depending on the exchangeable cations of the clay mineral, on the pH and on the dye cation concentration. The cation exchange capacity of clays by methylene blue adsorption can be determined when the samples are in the sodium exchanged form and the pH is neutral. So one obtains the same values as determined with the ammonium acetate method. The surface area of bentonites can only be calculated with methylene blue adsorption when the montmorillonite surface area per charge corresponds with the area of the methylene blue cation of 130 Å2, i.e. the interlayer charge of the montmorillonites must amount to 0.28–0.33 charges per half unit cell. Our investigations have confirmed the experiences in the application of the methylene blue method that it is necessary to work with optimum dispersion, a fixed clay:water ratio as well as a constant pH and a given initial amount of methylene blue in order to achieve reproducible results. With these assumptions the methylene blue adsorption can be used for the quality control of the same clay.

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Full Text: [1995\App Cla Sci10, 247.pdf](1995/App%20Cla%20Sci10,%20247.pdf)

Abstract: A palygorskite from Bercimuel (Segovia, Spain) was treated with 1.0, 3.0, 5.0 and 7.0 N solutions of HCI for 1 hour under reflux. The solids obtained were characterized by XRD, FT-IR spectroscopy, thermal analyses, TEM and nitrogen adsorption-desorption isotherms at 77 K. The acid treatment runs with the removal of the octahedral cations—Mg(II), Al(III) —and the formation of amorphous silica from the tetrahedral sheet. An important increase in the specific surface area was observed during treatment, reaching a maximum of 286 m2/g in the sample treated with 5.0 N HCI. The silica obtained after the treatments maintains the fibrous morphology of natural palygorskite. No creation of microporosity is observed during the treatment.

Rybicka, E.H. and Jedrzejczyk, B. (1995), Preliminary studies on mobilization of copper and lead from contaminated soils and readsorption on competing sorbents. *Applied Clay Science*, **10** (1), 259-268.

Full Text: [A\App Cla Sci10, 259.pdf](A/App%20Cla%20Sci10,%20259.pdf)

Abstract: The mobilisation and transfer of copper and lead from polluted soil (sample taken from the vicinity of copper smelter) to five different - mainly clayey - competing sorbents have been studied using a multichamber device. The system consists of a central chamber which contained the soil suspension and six external chambers containing the different sorbents: zeolite, smectite, vermiculite, diatomite and halloysite. The solids in the central and external chambers are separated by 0.45 µm membranes which allow diffusion of the mobilised, dissolved metal constituents. In the central chamber the metals from the soil were mobilised by decrease of pH (<5). The readsorbed amounts of Cu and Pb were obtained by taking samples after different time periods. The copper is mobilised to a higher degree than lead. The distribution of Cu is dominated by transfer and readsorption on smectite and zeolite, and also on halloysite at higher pH. Lead is mainly readsorbed on zeolite, and, at lower pH, on halloysite and smectite as well. Under the applied experimental conditions no significant transfer of both the Cu and Pb to the vermiculite and diatomite could be observed. These results indicate the higher affinity of lead on zeolite if compared with smectite; however, the latter remains the most effective sorbent of Cu. A mixture of smectite and zeolite is proposed for soil remediation procedures.

Keywords: Heavy-Metals, Adsorption, Iron, Sorption, Sediments, Oxides, Cd, Zn

Gutierrez, M. and Fuentes, H.R. (1996), A mechanistic modeling of montmorillonite contamination by cesium sorption. *Applied Clay Science*, **11** (1), 11-24.

Full Text: [A\App Cla Sci11, 11.pdf](A/App%20Cla%20Sci11,%2011.pdf)

Abstract: The triple layer electrochemical adsorption model (TLM) was utilized to model adsorption of Cs+ onto Ca-montmorillonite. Input data for the model were obtained via batch adsorption experiments in which Cs+ and mixtures of Cs+ and Sr2+ were added to a Ca-montmorillonite suspension at various conditions of pH and background electrolytes. A best fit of the model was achieved after gradually adjusting the values of the equilibrium constants and adsorption site concentrations. Two types of adsorption sites were considered to be responsible for adsorption in the clay: interlayer and frayed edges. The dominant mechanism of adsorption was identified as specific adsorption in the frayed edge sites, which although composing only 5% of the adsorption sites, they accounted for about 94% of total Cs adsorption. The model predicted precipitation of CsOH at concentrations above 1 mmol Cs/l, this value depending strongly on pH. The TLM successfully represented the adsorption of Cs over a wide range of concentrations, pH, nature of background electrolytes, and presence of competing cations.

Keywords: Montmorillonite, Cesium Sorption, Triple Layer Electrochemical Adsorption Model, Amorphous Iron Oxyhydroxide, Adsorption, Sediments, Cs-137, Fixation, Stream, Soils, Complexation, Radiocesium, Kaolinite

Brigatti, M.F., Medici, L. and Poppi, L. (1996), Sepiolite and industrial waste-water purification: Removal of Zn2+ and Pb2+ from aqueous solutions. *Applied Clay Science*, **11** (1), 43-54.

Full Text: [A\App Cla Sci11, 43.pdf](A/App%20Cla%20Sci11,%2043.pdf)

Abstract: The interaction between sepiolite and Zn2+ and Pb2+ aqueous solutions has been studied in order to verify the heavy-metal cation sorption-desorption rates. To this end, weighed amounts of sepiolite were placed in two conventional chromatographic columns and percolated at constant temperature, flow rate, pH and percolating solution concentration (0.5×10-2 M, with Zn2+ or Pb2+, Mg2+ and 10-2 M Na+, respectively). The amount of cations retained and released by the sepiolite bed in the effluent solution was analyzed by atomic absorption and UV-Visible spectrophotometries. The experimental results indicate that: (i) heavy-metal cation sorption can occur on the surface of broken edges, in channels and at specific sites according to crystal chemical affinity: Mg2+ sites are mostly affected by Zn2+-treatment and Ca2+ sites by Pb2+- treatment (Zn2+-treated bed, Mg2+/Ca2+ = 0.627; Pb2+-treated bed, Mg2+/Ca2+ = 0.475); (II) repeated treatments with heavy-metal cation solutions produce a decrease in adsorption and/or exchange capacity of the sepiolite bed; however, even when sepiolite is treated with alkali and earth alkali cations, it is able to retain a heavy-metal cation fraction, the retention of Zn2+ being greater than that of Pb2+. In order to investigate the chemical variation induced in sepiolite crystals by interaction between Zn2+ and Pb2+ solutions, a natural sample was treated with 1 M Zn2+ and 1 M Pb2+ solutions and then analyzed by X-ray powder diffraction and by differential thermal and thermogravimetric techniques.

Keywords: Sepiolite, Pb2+ Removal, Zn2+ Removal, Palygorskite

Erdoğan, B., Demirci, Ş. and Akay, Y. (1996), Treatment of sugar beet juice with bentonite, sepiolite, diatomite and quartamin to remove color and turbidity. *Applied Clay Science*, **11** (1), 55-67.

Full Text: [1996\App Cla Sci11, 55.pdf](1996/App%20Cla%20Sci11,%2055.pdf)

Abstract: We investigate the efficiency of five Turkish bentonites (Samas, Canbensan, Karakaya-Resadiye, Karakaya-Cankiri and Karakaya-Beyaz), a sepiolite, a diatomite and dioctade-cyldimethyl ammonium chloride (Quartamin D86) at removing color and turbidity from sugar beet juice. These minerals were added directly as a solid or as a suspension in water. The addition of bentonites was carried out after acid activation or without pretreatment. Bentonites, sepiolite and diatomite were added separately or with a certain amount of quartamin (600 ppm). The decolorization produced by quartamin with bentonites was about 34%, for quartamin with sepiolite the decolorization was 44.0% and for quartamin with diatomite 31.5%. Since diatomite is already used as filter aid, its application, with quartamin requires almost no change in the process, and is therefore recommended.

Keywords: Acid

Auboiroux, M., Baillif, P., Touray, J.C. and Bergaya, F. (1996), Fixation of Zn2+ and Pb2+ by a Ca-montmorillonite in brines and dilute solutions: Preliminary results. *Applied Clay Science*, **11** (2-4), 117-126.

Full Text: [A\App Cla Sci11, 117.pdf](A/App%20Cla%20Sci11,%20117.pdf)

Abstract: This paper presents preliminary results on the fixation of Zn2+ and Pb2+ by a purified Wyoming Ca-montmorillonite, in different experimental conditions: variable (3 . 10-5 < I < 3 . 10-2 M) or constant (I = 3.10-2 M) low ionic strength solutions, and high (I = 3 M) ionic strength solutions at 20°C and 50°C, In low ionic strength solutions, the fixation of Zn2+ and Pb2+ appears to be controlled by ionic exchange mechanism; Zn2+ and Pb2+ adsorption are strongly favoured over Ca2+ adsorption, Pb2+ being more strongly fixed than Zn2+. In high ionic strength solutions, for both metals, amounts of exchanged heavy metals are very small. The fixation is higher in 1 M CaCl2 than in 3 M NaCl solutions. Temperature has different effects on zinc and lead fixation, At 50°C, all the adsorption isotherms are shifted to higher values, except for lead in 1 M CaCl2 solutions. XRD characterizations of samples exchanged in dilute solutions show a decrease of hydration states with increasing Zn2+ and Pb2+ contents in the interlamellar space, Systematic determinations of CEC were performed on these samples, using Cu(EDA)2Cl2. The CEC decreases with increasing Pb2+ in clay, indicating that a part of exchanged Pb2+ becomes unexchangeable with (Cu(EDA)2)2+. On Zn-exchanged samples, the CEC remains constant.

Keywords: Zn-Pb-Ca-Clay, Brines, Ionic Exchange, CEC, XRD, Exchange, Pollutants, Waters

Suraj, G., Iyer, C.S.P., Rugmini, S. and Lalithambika, M. (1997), The effect of micronization on kaolinites and their sorption behaviour. *Applied Clay Science*, **12** (1-2), 111-130.

Full Text: [A\App Cla Sci12, 111.pdf](A/App%20Cla%20Sci12,%20111.pdf)

Abstract: The effect of micronization on the crystalline structure of kaolinite clay mineral and the role of this mechanically modified kaolinite structure on the adsorption/ion-exchange properties of toxic heavy metals are discussed. Two methods of micronization (ball milling and oscillatory milling) were used far the purpose. Micronization using a ball mill was found to be a slow process where dry grinding proved to have some effect compared to wet grinding. But grinding in an oscillatory mill could produce almost complete destruction of the clay structure (amorphization) within one hour of grinding time. The ground samples were characterized using XRD, IR spectrometry, TGA, DTA, SEM, surface area and pore volume measurements and particle size analysis. Adsorption kinetics for Cd and Cu show a slight improvement during the initial stages of grinding (i.e., from 4.24-4.68 meq/100 g for Cd and 2.79 to 3.45 meg/100 g for Cu at a grinding time of 10 min) brought in by the delamination after which the rate of adsorption decreases (1.024 meq/100 g and 1.09 meg/100 g for Cd and Cu respectively). For lead ions, there is an increased sorption and also it was observed that it takes a longer period for attaining equilibrium compared to cadmium and copper.

Keywords: Kaolinite, Grinding, Sorption, Heavy Metals, Copper, Cadmium, Lead, Crystal-Structure, Solid-State, Dry, Pyrophyllite, Chrysotile, Minerals, Water

Bergaya, F. and Vayer, M. (1997), CEC of clays: Measurement by adsorption of a copper ethylenediamine complex. *Applied Clay Science*, **12** (3), 275-280.

Full Text: [A\App Cla Sci12, 275.pdf](A/App%20Cla%20Sci12,%20275.pdf)

Abstract: A method for the rapid determination of CEC values in days using an ethylenediamine complex of Cu was tested with different clays. The single-step procedure is fast and does not require sophisticated apparatus. The exchange with most cations-and even with those of heavy metals-is irreversible and can be carried out over a range of pH values. The results, which can be obtained using a wide variety of analytical techniques, are generally in good agreement with those given by the classical Kjeldahl method.

Keywords: CEC, Clay, Copper Ethylenediamine Complex

Roehl, K.E. and Czurda, K. (1998), Diffusion and solid speciation of Cd and Pb in clay liners. *Applied Clay Science*, **12** (5), 387-402.

Full Text: [A\App Cla Sci12, 387.pdf](A/App%20Cla%20Sci12,%20387.pdf)

Abstract: For the assessment of the long-term sorption behavior of landfill clay liners towards contaminants the information given by distribution coefficients or retardation factors is not sufficient. Information regarding the solid speciation, which describes the actual bonding sites of sorbed contaminants, is required. The objective of the study presented in this paper was to analyze the retardation and solid speciation of Cd and Pb migrating into an illitic/smectitic loess loam by diffusion. Apparent diffusion coefficients as obtained from diffusion experiments on compacted loess loam with heavy metal solutions containing 0.001 M Cd or Pb chloride were in the range of 4.9-6.7.10-8 cm2/s for Cd and 3.6-7.4.10-9 cm2/s for Pb. The solid speciation was analyzed using a sequential extraction procedure giving operationally defined fractions (i.e. exchangeable, carbonatic, oxidic, organic, and residual fraction) of the sorbed heavy metals. The amounts of Cd and Pb migrated into the loess loam by diffusion clearly showed weaker bonding than the geogenic fraction. The speciation itself was significantly dependent on the heavy metal load showing weak bonding at high concentrations and strong bonding at low concentrations. Chemical extraction procedures can be used to analyse the sorption capacity of individual phases of the liner material towards heavy metals. Langmuir adsorption isotherms could be constructed for the individual operationally defined fractions, and the adsorption maxima and affinity parameters of these fractions could be determined. The results show that the specific sorption sites only have a limited capacity for heavy metals compared to nonspecific adsorption sites as represented particularly by the exchangeable fraction. Set in relation to the total sorption capacity of the investigated loess loam towards Cd and Pb, nonexchangeable bound species amount to only 7% (Cd) and 28% (Pb) for the carbonatic fraction, 1% (Cd) and 4% (Pb) for the oxidic fraction, and 0.5% (Cd) and 1% (Pb) for each the organic and residual fraction. The results emphasise that chemical extraction procedures can give important indications about the way heavy metals are actually fixed to the components of a landfill clay liner material. (C) 1998 Elsevier Science B.V.

Keywords: Clay Liner, Diffusion, Heavy Metals, Sequential Extraction, Sorption, Speciation, Trace-Metals, Heavy-Metals, Sorption, Adsorption, Extraction, Encapsulation, Fractions, Sediments, Iron, Zn

Lawrence, M.A.M., Kukkadapu, R.K. and Boyd, S.A. (1998), Adsorption of phenol and chlorinated phenols from aqueous solution by tetramethylammonium- and tetramethylphosphonium-exchanged montmorillonite. *Applied Clay Science*, **13** (1), 13-20.

Full Text: [A\App Cla Sci13, 13.pdf](A/App%20Cla%20Sci13,%2013.pdf)

Abstract: Sorption of phenol and 2-, 3- and 4-chlorophenol from water by tetramethylammonium (TMA)-smectite and tetramethylphosphonium (TMP)-smectite was studied. Sorption of the phenolic compounds appeared to occur on the aluminosilicate mineral surfaces between neighboring organic cations (TMA or TMP). TMP-smectite was a better sorbent than TMA-smectite, which did not measurably adsorb any of the phenolic compounds. This disparity in sorption efficiency was attributed to differences in hydration of the interlayer cations. Apparently, hydration occurred to a greater extent in TMA-smectite that in TMP-smectite, causing the interlayer pore size to be smaller for TMA-smectite than for TMP-smectite. TMP-smectite showed selective sorption within the group of chlorinated phenols studied. Phenol and 4-chlorophenol were effectively sorbed by TMP-smectite, whereas 2- and 3-chlorophenol were not sorbed. The selectivity appeared to be size- and shape-dependent, and not strongly influenced by water solubility. (C) 1998 Elsevier Science B.V. All rights reserved.

Keywords: Phenol, Chlorophenol, Sorption, Clay, Smectite, Water, Adsorbents

Goswamee, R.L., Sengupta, P., Bhattacharyya, K.G. and Dutta, D.K. (1998), Adsorption of Cr(VI) in layered double hydroxides. *Applied Clay Science*, **13** (1), 21-34.

Full Text: [A\App Cla Sci13, 21.pdf](A/App%20Cla%20Sci13,%2021.pdf)

Abstract: Adsorption of Cr(VI) by various uncalcined and calcined layered double hydroxides (LDH) of Mg-Al, Ni-Al and Zn-Cr types was investigated. Adsorption of Cr2O72-through ion exchange in uncalcined LDH is slower in rate and smaller in amount than in calcined one where the adsorption occurs via rehydration. The nature and content of bi-and trivalent metal ions in LDH influence the adsorption. Calcined Mg-Al LDH with higher Al3+ content in the precursor structure shows higher adsorption capacity. Adsorption is higher in the Mg-Al LDH than in Ni-Al and Zn-Cr LDH. A two-step first-order rate kinetics was observed for the adsorption process which follows the Freundlich-type adsorption isotherm. The explanation of adsorption phenomenon has been supported by X-ray diffraction patterns. The pH of initial Cr2O72-solution has no affect on adsorption by calcined LDH. Release of Cr2O72-from the adsorbed product depends upon the type of anion in the aqueous phase and CO32-being the most effective ion. Calcination of the Cr2O72-adsorbed product up to 1250°C has not resulted in the formation of Cr-immobilized phases. (C) 1998 EIsevier Science B.V. All rights reserved.

Keywords: Layered Double Hydroxides, Hydrotalcites, Adsorption, Memory Effect, Hydrotalcite-Like Compounds, Anionic Clay-Minerals, Physicochemical Properties, Synthetic Hydrotalcites, Thermal-Decomposition, Aluminum-Oxides, Removal, Exchange, Chromium, Systems

Suraj, G., Iyer, C.S.P. and Lalithambika, M. (1998), Adsorption of cadmium and copper by modified kaolinite. *Applied Clay Science*, **13** (4), 293-306.

Full Text: [1998\App Cla Sci13, 293.pdf](1998/App%20Cla%20Sci13,%20293.pdf)

Abstract: Novel amorphous derivatives of kaolinites were prepared by thermal modification followed by acid activation which improved the exchangeability of kaolinites. The crystalline structure of kaolinite was thermally transformed to amorphous metakaolin which on acid activation released preferentially the octahedral aluminium ions from the clay lattice, without disturbing its structure and revealing these sites for substitution with other metal ions. When the substituted metal ion has a lower charge the net negative charge at the site enables adsorption of cations. Additional-Al-OH and-Si-OH bonds formed also will act as cation exchange centres. Adsorption of cadmium and copper on these modified kaolinites was studied as a function of equilibration time and temperature and it was found that the initial 1 h was sufficient to exchange most of the metal ions. Two kaolinitic clay samples obtained from Thonnakkal, south Kerala (TK) and Madai, north Kerala (MK) were modified to study their exchange behaviour. The exchangeability was found to decrease with an increase in the calcination temperature (to 600°C) of kaolinite samples; i.e., from 6.34 to 3.08 (Cd) and 6.06 to 3.06 (Cu) mmol (c)kg-1 for TK and 6.55 to 3.15 (Cd) and 6.21 to 4.16 (Cu) mmol, kg-1 for MK. An improved exchange kinetics applies for their modified (calcined and acid activated) counterparts, i.e., 13.36 (Cd) and 18.80 (Cu) mmol, kg-1 for TK and 13.64 (Cd) and 18.09 (Cu) mmol, kg-1 for MK. The amount of metal ions adsorbed showed a direct correlation with the surface area and CEC values. The uptake of Cd and Cu at 30, 40, 50 and 60°C displayed similar kinetics with maximum uptake at 40°C for both Cd and Cu. (C) 1998 Elsevier Science B.V. All rights reserved.

Keywords: Ion-Exchange, Surface, Sorption, Removal, Clays, pH, Dissolution, Chemistry, Kaolinite, Adsorption, Calcination, Acid Activation, Sodium Exchange, Heavy Metals

? Viseras, C. and Lopez-Galindo, A. (1999), Pharmaceutical applications of some Spanish clays (sepiolite, palygorskite, bentonite): Some preformulation studies. *Applied Clay Science*, **14** (1-3), 69-82.

Full Text: [1999\App Cla Sci14, 69.pdf](1999/App%20Cla%20Sci14,%2069.pdf)

Abstract: In this work, a pharmaceutical preformulation study of four Spanish days (two sepiolites, one palygorskite and one bentonite) is presented, comparing the results obtained with those of three mineral products currently used in pharmaceutical technology. The results showed that the mineralogical and chemical purity of these clays is similar and even higher than that of the three commercial products. The microorganism content is inside the range required for non-sterile pharmaceutical forms. We also determined two parameters concerning the clays’ suitability for use in tablet manufacture (colour and water content) and one indicating appropriateness as an antidiarrheic product (adsorption capacity of methylene blue). The clays are yellowish white in colour, although correction does not seem necessary; water content varies according to the structure of the clay and storage conditions. Adsorption capacity of methylene blue is affected by the amount of hydration water present, dehydration temperature and the type of interchangeable cation found in the clay. (C) 1999 Elsevier Science B.V. All rights reserved.

Keywords: Bentonite, Coating Colors, Excipients, Methylene Blue, Palygorskite, Pharmaceutical Uses, Sepiolite

Brigatti, M.F., Lugli, C. and Poppi, L. (2000), Kinetics of heavy-metal removal and recovery in sepiolite. *Applied Clay Science*, **16** (1-2), 45-57.

Full Text: [A\App Cla Sci16, 45.pdf](A/App%20Cla%20Sci16,%2045.pdf)

Abstract: Fixed beds of Mg-enriched sepiolite were percolated through Co2+, Cu2+, Zn2+, Cd2+ and Pb2+ single-and multicomponent heavy-metalsolutions to study both the dynamic interactions between mineral and heavy-metal cations and the ion-sorption kinetics. The metal concentrations in the eluates were determined by atomic adsorption and/or inductively-coupled plasma and kinetics by the classical kinetic approach, using isothermal experiments at room temperature. The experimental results suggest that: (i) the amount of heavy metalsorbed by the mineral increases for smaller cations; ii) the sepiolite sorption efficiency sequence is, for single component solution, Pb2+ < Cd2+ < Co2+ < Zn2+ < Cu2+, and; for multicomponent solution, Pb2+ = Co2+ < Cd2+ < Zn2+ < Cu2+. Therefore, the ability of sepiolite to remove Cu2+, Zn2+, Cd2+ and Pb2+ is virtually independent of the competitive cation interactions, whereas its affinity for Co2+ is lower when other metals coexist in the solution. The cationic sorption-exchange equilibrium constants (k), obtained by fitting the data with Langmuir equations are: kCo2+) = 4.798×10-3, kCu2+ = 3.424×10-3 kZn2+ = 2.907×10-3, kPb2+ = 1.009×10-2 [meq min]-1, kCd2+ = 1.187×10-2 [meq min]-1/2 for monocomponent solution experiment. The desorption study concerning the nature of eluting agents shows that Mg2+ is more effective than Na+ in removing heavy metals. Rapid kinetics and equilibrium of exchange of Mg2+ for heavy metals were observed; this is thought to indicate that the main process occurs at easily accessible sites at the outer and channel surface. Moreover, other processes can be assigned to the exchange of Mg2+ in the octahedral sites at the channel edges.

Keywords: Water, Sepiolite, Heavy Metal, Dynamic Interaction, Kinetics

Ambikadevi, V.R. and Lalithambika, M. (2000), Effect of organic acids on ferric iron removal from iron-stained kaolinite. *Applied Clay Science*, **16** (3-4), 133-145.

Full Text: [A\App Cla Sci16, 133.pdf](A/App%20Cla%20Sci16,%20133.pdf)

Abstract: The effect of various organic acids viz. acetic, formic, citric, ascorbic, succinic, tartaric and oxalic acids, on the iron removal and the resulting brightness improvement of an iron-stained kaolinitic clay from Kalliyur, Thiruvananthapuram, South India, has been investigated. Oxalic acid was found to give the best results both at room temperature as well as at high temperatures because of its high acid strength, good complexing capacity and reducing power. The reaction parameters such as time, temperature and reagent concentration were optimised. The optimum conditions required for achieving brightness greater than or equal to 80% were: temperature - 100°C, oxalic acid concentration - 0.1 M and reaction time - 90 min. The leaching tests at room temperature for 30 days improved the brightness from 66.3 to 83.5% ISO. The corresponding iron oxide removal was of the order of - 80%. The addition of ferrous ions and protons improved the reaction kinetics. The leaching tests carried out on previously beneficiated samples using magnetic separation showed only a slight improvement in brightness indicating that brightness depended more on the surface coated iron oxides rather than on the discrete particles. The effect of acid leaching on the physical properties of the clay such as brightness, plasticity, viscosity, specific surface area and pore volume were compared. The slight increase in the specific surface area and the pore volume are suggestive of removal of the cementing non-crystalline alumina, silica and iron oxides from the clay surface and also due to the resulting delamination to a limited extent. No marked change was observed in the viscous as well as the plastic properties due to the deferration treatments. (C) 2000 Elsevier Science B.V. All rights reserved.

Keywords: Iron-Stained Kaolinite, Oxalic Acid, Deferration, Brightness, Dissolution, Oxides, Design, Ions, Soil

Hsu, Y.H., Wang, M.K., Pai, C.W. and Wang, Y.S. (2000), Sorption of 2,4-dichlorophenoxy propionic acid by organo-clay complexes. *Applied Clay Science*, **16** (3-4), 147-159.

Full Text: [A\App Cla Sci16, 147.pdf](A/App%20Cla%20Sci16,%20147.pdf)

Abstract: Wyoming montmorillonite (SWy-1, MON), Charng-Bin (SCB) soil montmorillonite, and W.R. Grace vermiculite (VER) have been used as adsorbents to prepare organo-clays. Sorption of 2,4-dichlorophenoxy propionic acid (2,4-DP) by organo-clays is greater after adding of hexadecyltrimethyl-ammonium (HDTMA) to 200% CEC of the clay than after adding the same amount of HDTMA to 100% CEC of clay (HDTMA–clay). The Freundlich adsorption isotherm describes 2,4-DP sorption by HDTMA–clays (Kf = 1.828–11.474 l kg−1, nf = l.130–1.454, R = 0.919–0.944) quite well. Low surface charge montmorillonite can allow a high concentration of 2,4-DP to penetrate into the interlayer with low residual charge on the wedge. Thus, with increasing 2,4-DP concentration, the basal d-spacings of HDTMA-montmorillonite complexes increased from 2.15 to 2.71 nm. However, increasing the concentration of 2,4-DP did not result in further swelling of vermiculite owing to the high surface charge. In general, HDTMA–montmorillonite (O-MON) sorbed more 2,4-DP than HDTMA–soil montmorillonite (O-SCB) and HDTMA–vermiculite (O-VER). Thus, the interlayer sorption of 2,4-DP exhibited a critical level, beyond which further expansion of the clays does not occur. The equilibrated pH in the suspension affected the adsorption by HDTMA–clay complexes. The maximum 2,4-DP adsorption occurs at a pH level of approximately 3 corresponding to pKa = 3.0 of 2,4-DP in the adsorption–pH curve.

Keywords: Hexadecyltrimethyl-Ammonium Clays (HDTMA–clays), 2,4-dichlorophenoxy Propionic Acid (2,4-DP), Montmorillonite, Sorption, Vermiculite

Miyamoto, N., Kawai, R., Kuroda, K. and Ogawa, M. (2000), Adsorption and aggregation of a cationic cyanine dye on layered clay minerals. *Applied Clay Science*, **16** (3-4), 161-170.

Full Text: [A\App Cla Sci16, 161.pdf](A/App%20Cla%20Sci16,%20161.pdf)

Abstract: The adsorption and aggregation of a cationic cyanine dye, 1,1’-diethyl-2,2’-cyanine (pseudoisocyanine; abbreviated as PIC), on various clays have been investigated. The PIC formed J-aggregates on Na-montmorillonite and synthetic Na-fluor-tetrasilicic mica (TSM), while they distributed molecularly on synthetic Na-saponite and synthetic Na-hectorites. The particle size of the clays was considered to be a dominant factor to control the aggregation of PIC. The J-aggregate formation was suppressed when tetramethylammonium-montmorillonite was employed as a host material. Ethylene glycol in the suspension was also responsible for the suppression of J-aggregate formation of PIC. Thus, the aggregation of PIC was effectively controlled by the species surrounding the PIC cations as well as the nature of clays. (C) 2000 Elsevier Science B.V. All rights reserved.

Keywords: Clay Minerals, Cyanine Dye, J-Aggregate, Tetramethylammonium, Ethylene Glycol, Excitation-Energy Transfer, Intercalation, Size, Luminescence, Suspensions, Assemblies, Laponite, Ions

Gier, S. and Johns, W.D. (2000), Heavy metal-adsorption on micas and clay minerals studied by X-ray photoelectron spectroscopy. *Applied Clay Science*, **16** (5-6), 289-299.

Full Text: [A\App Cla Sci16, 289.pdf](A/App%20Cla%20Sci16,%20289.pdf)

Abstract: X-ray photoelectron spectroscopy (XPS) was used to study the adsorption of Cs-, Ba-, Cu-, Zn-, and Pb-ions on the external surfaces of various, well characterized 2: 1 layer silicates (micas and illites).

Before studying metal adsorption, it was necessary to determine the charge magnitude of the adsorption surface. This was done fur chemically well-characterized micas (margarite, muscovite, sericite). The XPS analyses showed that the depth of analysis is about 15 Angstrom. As a result it was possible to measure the surface- and interlayer ions on both sides of the outermost 2: 1 layer. In determining the layer charges, the following strategy was used. The outer surface cations were replaced by Ba2+, giving, for ideal margarite an interlayer cation (Ca2+)/surface cation (Ba2+) ratio of 2: 1 and in the case of muscovite a K+/Ba2+ ratio of 4: 1. Deviations from these ratios indicate an asymmetry of layer charge in the outer sheet. Using the magarite, muscovite and sericite as standards, surface charge determination of a number of micas, illites, and I/S clays could be carried out by XPS.

The properties of the metal-ions (charge, ionic radius, ionic potential), as well as layer charge characteristics of the clay, including surface charge magnitude and point of origin from tetrahedral or octahedral substitution, are factors which influence adsorption selectivity [Sposito, G., 1989. surface reactions in natural aqueous colloidal solutions, G. Chimia, 43, 169-176]. The selection of previously well-characterized minerals, margarite, muscovite, celadonite, illite, montmorillonite, and beidellite for XPS study made it possible to relate these factors to heavy metal adsorption by the clay minerals.

The results show that Cu2+ and Zn2+ are adsorbed as monovalent ions, presumably as (CuOH)+ and (ZnOH)+ hydroxy surface-complexes, due to their high ionic potential. Saturating the mica series with equimolar pairs of Cu-Zn and Cu-Pb, the ratios of Cu/Zn and Cu/Pb increase systematically with external surface charge. The higher the surface charge, the more selective is the exchange process for Cu with respect to Zn or ph. Increasing external surface charge parallels increasing tetrahedral charge, which indicates that selectivity takes place at points of tetrahedral negativity on the crystallite surface, whereas octrahedral charge plays little role in the selective adsorption process. (C) 2000 Elsevier Science B.V. All rights reserved.

Keywords: Adsorption, Clay Minerals, Heavy Metals, Surface Properties, X-Ray Photoelectron Spectroscopy

Koh, S.M. and Dixon, J.B. (2001), Preparation and application of organo-minerals as sorbents of phenol, benzene and toluene. *Applied Clay Science*, **18** (3-4), 111-122.

Full Text: [A\App Cla Sci18, 111.pdf](A/App%20Cla%20Sci18,%20111.pdf)

Abstract: Nonionic organic contaminants (NOCs) such as benzene, phenol, and toluene from contaminated wastewater can be effectively sorbed by organo-modified minerals. Organo-minerals were prepared from Na-montmorillonite, sericite, and zeolite by exchanging quaternary ammonium cations with various molecular weights such as Benzyldimethyltetradecylammonium (BDTDA), Hyamine 1622®, and Benzyltrimethylammonium (BTMA). The adsorption capacity of these organic cations onto these minerals is in the order of montmorillonite>zeolite>sericite, which is mainly dependent on the Ca/Mg cation exchange capacity (CEC) of each mineral. The interlayer expansion of the basal spacings of BDTDA- and Hyamine-montmorillonite increases from 12.5 to 30.8 Å as the amount of interlayer organic cation increases. BTMA-montmorillonite is characterized by less interlayer expansion. The aliphatic tale on the BDTDA ion apparently contributes to the multiple interlayer sorption in BDTDA in contrast to BTMA’s reluctance to sorb a second interlayer. The exchange capacity of organic cations onto montmorillonite and the interlayer expansion of organo-montmorillonite correlate with the sorption of phenol, benzene, and toluene. BDTDA-, Hyamine-, and BTMA-montmorillonite complexes include benzyl functional groups and are effective sorbents for NOCs such as phenol, benzene, and toluene in aqueous solutions and may have practical applications in wastewater purification. The BTMA-zeolite complexes have potential for application as a sorbent for phenol. Organo-sericite complexes were the least effective sorbents of the three minerals tested.

Comparison of the three NOCs with activated carbon indicates that these organo-mineral complexes all fall short of sorbing as did the activated carbon. BDTDA-montmorillonite stands out as the best performing product and it improved with each addition of surfactant to about 70% of the activated carbon sorption of benzene and 66% of toluene. BTMA-zeolite sorption was 65% of the sorption of the activated carbon for benzene and about 50% of the activated carbon sorption of toluene.

Phenol was sorbed little on the untreated zeolite or sericite surfaces and poorly on the organo-mineral phases except that the BDTDA- and BTMA-montmorillonite sorbed about 35% as much phenol as sorption by activated carbon.

Keywords: Nonionic Organic Contaminants, Quaternary Ammonium Cations, Interlayer Expansion, Uptake Capacity, Sorbents, Wastewater Purification

Rodríguez-Sarmiento, D.C. and Pinzón-Bello, J.A. (2001), Adsorption of sodium dodecylbenzene sulfonate on organophilic bentonites. *Applied Clay Science*, **18** (3-4), 173-181.

Full Text: [A\App Cla Sci18, 173.pdf](A/App%20Cla%20Sci18,%20173.pdf)

Abstract: A bentonite from the Cauca Valley in Colombia was treated with tetramethylammonium bromide (TAB), hexade-cyltrimethylammonium bromide (CTAB), hexadecylbenzyldimethylammonium chloride (CDAC), and alkylbenzyldimethylammonium chloride (BTC), in order to obtain organophilic compounds. The treatment was carried out at 50% and 100% of the cationic exchange capacity (CEC) of the natural bentonite (NB). The adsorption of an aqueous solution of sodium dodecylbenzene sulfonate (DBS) over the natural and modified bentonites was studied. The experimental data points were fitted to several equations applicable to adsorption in solution such as: Langmuir, BET and Freundlich. The Langmuir isotherm adequately describes the adsorption process in all cases. The adsorption grade can be quantified by the distribution coefficient, for low concentrations in solution expressed in molality, K-dm. The affinity of organophilic bentonites by DBS can be expressed in terms of the standard adsorption Gibbs energy. The class and structure of the hydrocarbon chains of the quaternary ammonium ions adsorbed over the bentonite determine the DBS adsorption grade. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Montmorillonite, Organophilic Bentonites, Adsorption, Surfactants, Langmuir Isotherm, Clay-Minerals, Sorption, Surfaces, Water

Vengris, T., Binkiene, R. and Sveikauskaite, A. (2001), Nickel, copper and zinc removal from waste water by a modified clay sorbent. *Applied Clay Science*, **18** (3-4), 183-190.

Full Text: [A\App Cla Sci18, 183.pdf](A/App%20Cla%20Sci18,%20183.pdf)

Abstract: The use of a sorbent produced by the chemical treatment of a locally available clay for the removal of some heavy metals from waste water has been investigated. The modification of the natural clay was performed by treatment with hydrochloric acid and subsequent neutralisation of the resultant solution by sodium hydroxide. The chemical and structural characteristics of the natural and modified clays were determined. The amount of iron, aluminium and magnesium compounds increased in the modified sorbent. Acidic treatment led to the decomposition of the montmorillonite structure. Sorption studies were carried out by both batch and column methods. The uptake capacity of the modified clay for nickel, copper and zinc did significantly increase. Batch and column sorption methods enabled the removal of nickel, copper and zinc ions till the permissible sewerage discharge concentration. The sorption process is reflected by Langmuir-type isotherm. The release of presorbed metals by water at pH 5 was negligible. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Modified Clay, Uptake Capacity, Nickel, Copper, Zinc, Ion

Bojemueller, E., Nennemann, A. and Lagaly, G. (2001), Enhanced pesticide adsorption by thermally modified bentonites. *Applied Clay Science*, **18** (5-6), 277-284.

Full Text: [A\App Cla Sci18, 277.pdf](A/App%20Cla%20Sci18,%20277.pdf)

Abstract: Wyoming bentonite was calcined at 350–550° for 1, 3, and 12 h, dispersed in water and freeze-dried. Calcination at 350–450°C for 12 h decreased the specific surface area strongly. At higher calcination temperatures, the surface area became similar to the value of the uncalcined bentonite (24 m2/g). The micropore (diameter <2 nm) volume of the calcined samples was very small (<0.2 μl). In contrast, the mesopore (diameter 2–50 nm) volume increased sharply when the bentonite was calcined at >450°C. The total specific surface area mainly comprised the mesopore surface area. The Wyoming bentonite used in these experiments adsorbed considerable amounts of metolachlor from aqueous solutions, and the adsorption was enhanced by calcinating the bentonite. The metolachlor molecules, very likely, interact with aluminum ions or oligomeric hydroxoaluminum cations enriched on the edges of the silicate layers as a consequence of the thermal attack to the edges. A pronounced adsorption–desorption hysteresis is advantageous for using these bentonites in slow-release pesticide formulations.

Keywords: Adsorption, Bentonite, Calcination, Colloids, Herbicides, Metolachlor, Sedimentation, Slow-Release Formulations

Tarasevich, Y.I. and Klimova, G.M. (2001), Complex-forming adsorbents based on kaolinite, aluminium oxide and polyphosphates for the extraction and concentration of heavy metal ions from water solutions. *Applied Clay Science*, **19** (1-6), 95-101.

Full Text: [A\App Cla Sci19, 95.pdf](A/App%20Cla%20Sci19,%2095.pdf)

Abstract: The sorbents for the absorption of heavy metal ions from water solutions are developed by the modification of kaolinite, meta-kaolinite and aluminium oxyhydride by polyphosphates. It is shown that for sorption from concentrated solutions, the amount of the polyphosphate inoculated to the sorbent due to the condensation reaction significantly exceeds the number of anionic exchange sites existing at the surface of the sorbent. The adsorption isotherms of Ni2+, Co2+ and Cr3+ at the adsorbents prepared in this way demonstrate high adsorption capacity (300 to 100 mg/g depending on the sorbent type) and high selectivity of the materials with respect to the sorbed cations. The distribution coefficients in the Henry region, Kd = 5×105-1×104 cm3/g, are comparable to the Values characteristic to organic chelate-forming sorbents. Electron reflection spectra are indicative of the complex-forming mechanism of the adsorption of Ni2+, Co2+ and Cr3+ at the modified adsorbents. The decrease of pH to 2 results in the almost complete desorption of heavy metal ions from the adsorbent surface. The method that involves the use of aluminium oxynitrate is developed for the preparation of mechanically strong water-resistant hydrostable granules of modified sorbents. The sorbents were tested in the process of Ni2+ removal from galvanic wastewater; the concentration of these ions was decreased from 200 to 0.5 mg/dm(3). (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Kaolinite, Meta-Kaolinite, Aluminium Oxide, Aluminium Hydroxide Gel, Polyphosphates, Heavy Metal Ions, Adsorption, Desorption, Complex Formation, Extraction, Concentration, Galvanic Wastewater

You, Y.W., Vance, G.F. and Zhao, H.T. (2001), Selenium adsorption on Mg-Al and Zn-Al layered double hydroxides. *Applied Clay Science*, **20** (1-2), 13-25.

Full Text: [A\App Cla Sci20, 13.pdf](A/App%20Cla%20Sci20,%2013.pdf)

Abstract: Layered double hydroxides (LDHs) have high anion exchange capacities that enhances their potential to remove anionic contaminants from aqueous systems. In this study, different Mg-Al and Zn-Al LDHs were synthesized by a coprecipitation method, with the products evaluated for their ability to adsorb selenite (SeO32-) and selenate (SeO42-). Results indicated the adsorption isotherm for SeO32- retention by Mg-Al and Zn-Al LDHs could be fitted to a simple Langmuir equation with the affinity of SeO32- on Zn-Al LDH higher than that on Mg-Al LDH. The adsorption trends for both SeO32- and SeO42- on LDHs were similar under the experimental conditions. The SeO32- adsorption was rapid and was affected by the initial SeO32- concentration. The quasi-equilibrium for 0.063 and 0.63 cmol/l SeO32- solutions was obtained within the first 30 and 60 min of adsorption, respectively. The maximum adsorption of SeO32- on Mg-Al LDH was higher than that of Zn-Al LDH and decreased with an increase in the LDH mole ratio of Mg/Al. The high pH buffering capacities and the SeO32- adsorption for Mg-Al and Zn-Al LDHs was a function of pH. Competing anions strongly affected the adsorption behavior of SeO32- with SeO32- adsorption increasing in the order: HPO42- < SO42- < CO32- < NO3-. The release of adsorbed SeO32- depended upon the type of competing anion in the aqueous solution. For example, with CO32- the adsorbed SeO32- could be desorbed completely from Mg-Al LDH. X-ray diffraction patterns indicated that d-spacing increased when SeO42- was adsorbed, but not with SeO32- adsorption. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Layered Double Hydroxides, Selenite, Selenate, Adsorption, Hydrotalcite-Like Compounds, Anion-Exchange, Physicochemical Properties, Organic-Compounds, Alluvial Soils, Sulfate, Intercalation, Speciation, Reactivity, Carbonate

Krishna, B.S., Murty, D.S.R. and Prakash, B.S.J. (2001), Surfactant-modified clay as adsorbent for chromate. *Applied Clay Science*, **20** (1-2), 65-71.

Full Text: [A\App Cla Sci20, 65.pdf](A/App%20Cla%20Sci20,%2065.pdf)

Abstract: The adsorption of oxyanion of chromate was not given much attention, perhaps due to the fact that clays are negatively charged and unmodified clay mineral surface shows no affinity for chromate. After modification by cationic surfactant, clay was found to adsorb considerable amounts of chromate. Hexadecyl trimethylammonium (HDTMA) bromide was used to modify the surface of clay minerals such as kaolinite, montmorillonite, and pillared montmorillonite. Montmorillonite adsorbed a quantity of HDTMA equivalent to the cation exchange capacity. Kaolinite and pillared clay adsorbed relatively small amounts of the surfactant.

The amount of chromate adsorbed was maximum at and below pH I and proportional to the amount of HDTMA fixed on motmorillonite. The amount of chromate adsorbed between pH 2 and 6 was one half of that at pH 1, and above pH approximate to 8 the adsorption was negligible. The pH dependence of chromate adsorption was attributed to the pH dependent-equilibria HCr2O7- reversible arrow Cr2O72- reversible arrow CrO42-. The adsorption data obtained was well described by Langmuir adsorption isotherm. Kinetics of chromate adsorption (diffusion constant) was calculated and a mechanism for the adsorption is proposed. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Clay-Adsorbent, HDTMA-Clay, Chromate Adsorption, Surfactant Modification, Cationic Surfactant, Organo-Clays, Sorption, Clinoptilolite, Adsorption, Zeolite

? Cerezo, P., Iborra, C.V., Lopez-Galindo, A., Ferrari, F. and Caramella, C. (2001), Use of water uptake and capillary suction time measures for evaluation of the anti-diarrhoeic properties of fibrous clays. *Applied Clay Science*, **20** (1-2), 81-86.

Full Text: [2001\App Cla Sci20, 81.pdf](2001/App%20Cla%20Sci20,%2081.pdf)

Abstract: This study explores the use of water sorption, retention measures as alternative methodologies to the official methylene blue adsorption test for the evaluation of the anti-diarrhoeic properties of some fibrous clay, Three fibrous phyllosilicates-palygorskite, from Ciudad Real (PCR), and sepiolite from Vicalvaro (SV) and Yunclillos (SY)-have been studied. Two commercial anti-diarrhoeal products-Pharmasorb Colloidal(C) (PHC) and Pharmasorb Regular(C) (PHR)-each mainly consisting of palygorskite, were also included in the study. The 75-125-mum sieve fraction was selected and methylene blue adsorption (MBA) capacity and water uptake characteristics-total amount of water retained (Q(max)) and water uptake velocities (I-W)-measured. Finally, the water retention capacity, with dispersions of 10% w, v, was assessed by means of capillary suction measures (CST). MBA capacity was similar for all the samples, with PHC showing the highest capacity to adsorb the dye. PHC was also the sample which retained the most water (Q(max) > 2.5 mg, mg), followed by PCR and PHR (Q(max) approximate to 1.5 mg, mg) and finally SV and SY (Q(max) < 1 mg, mg). Regarding the velocity for water entry, water uptake was almost total after 10 s for sepiolite samples, 100 s for PHR and 600 s for PCR and PHC. Finally, water retention time of the PHC dispersion (> 160 s) was almost twice those of the rest of studied materials. A linear correlation was found between the amount of palygorskite in PCR, PHC and PHR and their water uptake capacities. This was not possible for the sepiolite samples. An inverse correlation was found between velocity of water suction (I-w) and capacity of methylene blue adsorption. Water uptake and water retention measures are proposed as complementary to the methylene blue adsorption assay in the evaluation as anti-diarrhoeics of the studied materials. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Anti-Diarrhoeic, CST, MBA, Methylene Blue, Palygorskite, Sepiolite, Water Uptake

Rytwo, G., Tropp, D. and Serban, C. (2002), Adsorption of diquat, paraquat and methyl green on sepiolite: experimental results and model calculations. *Applied Clay Science*, **20** (6), 273-282.

Full Text: [A\App Cla Sci20, 273.pdf](A/App%20Cla%20Sci20,%20273.pdf)

Abstract: Adsorption of the divalent organic cations paraquat (PQ), diquat (DQ) and methyl green (MG) on sepiolite was determined experimentally and investigated with an adsorption model. The largest amounts of DQ, PQ and MG adsorbed were between 100% and 140% of the cation exchange capacity (CEC) of sepiolite. In previous experiments with monovalent organic cations (dyes), the largest amounts of dyes adsorbed were about 400% of the CEC of sepiolite. Consequently, it was proposed that most of this adsorption was to neutral sites of the clay. The large differences between the adsorption of these divalent organic cations and the monovalent dyes may indicate that there is almost no interaction between DQ, PQ and MG and the neutral sites of sepiolite. This assumption was confirmed by infrared (IR) spectroscopy measurements, that did not show changes in the peaks arising from the vibrations of external Si---OH groups of the clay when the divalent organic cations were added. Adsorption results were compared with calculations of an adsorption model that combines the Gouy–Chapman solution and specific binding in a closed system. The model considers cation adsorption on neutral sites of the clay, in addition to adsorption to mono- or divalent negatively charged sites, forming neutral or charged complexes. The model could adequately simulate the adsorption of the divalent organic cations DQ and PQ when added alone, and could yield good fit for the competitive adsorption experiment between the monovalent dye methylene blue and DQ. In competitive adsorption experiments, when total cationic charges exceeded the CEC, monovalent organic cations were preferentially adsorbed on the clay at the expense of the divalent cations.

Keywords: Sepiolite, Diquat, Paraquat, Methyl Green, Adsorption Model

Ghosh, D. and Bhattacharyya, K.G. (2002), Adsorption of Methylene blue on kaolinite. *Applied Clay Science*, **20** (6), 295-300.

Full Text: [A\App Cla Sci20, 295.pdf](A/App%20Cla%20Sci20,%20295.pdf)

Abstract: Methylene blue was adsorbed on kaolin from a local deposit. The raw kaolin itself was a relatively good adsorbent. The adsorption capacity was improved by purification and by treatment with NaOH solution. Calcination of the kaolin reduced the adsorption capacity. The adsorption data could be fitted by the Freundlich and Langmuir equations. Also, the thermodynamic parameters such as DeltaH(0), DeltaS(0) and DeltaG(0) were determined. (C) 2002 Elsevier Science B.V. All rights reserved.

Keywords: Kaolinite, Adsorption, Methylene Blue

Benincasa, E., Brigatti, M.F., Malferrari, D., Medici, L. and Poppi, L. (2002), Sorption of Cd–cysteine complexes by kaolinite. *Applied Clay Science*, **21** (3-4), 191-201.

Full Text: [A\App Cla Sci21, 191.pdf](A/App%20Cla%20Sci21,%20191.pdf)

Abstract: The effect of cysteine on the adsorption of Cd(II) by kaolinite was examined at 25 °C using a low-defect kaolinite from Minas Gerais (Brazil) and a high-defect kaolinite from Berici Hills (Italy). The chemical data demonstrated that the amount of Cd–cysteine detected on kaolinite increases rapidly during the first few hours with a first-order reaction, thereafter adsorption becomes linear with time for low-defect kaolinite and slows rapidly for high-defect kaolinite. In low-ordered kaolinite, the Cd–cysteine is intercalated in the structure. Evidence of these changes was also observed by differential thermal analysis (DTA). The thermal decomposition of the Cd–cysteine adsorbed on the kaolinites was studied by analysing the evolved gases. The mass spectra of both samples show the evolution of NO (or CH3CH3, m/z = 30), CO2 (m/z = 44), and SO2 (m/z = 64) between 150 and 300 °C and of H2O (m/z = 18), CO2 (m/z = 44) and SO2 (m/z = 64) in the temperature range between 400 and 700 °C. The high-defect kaolinite also caused the evolution of molecular units with m/z = 34 (H2S) and m/z = 76 (N2O3).

Keywords: Kaolinite, Cd–Cysteine Complex, Adsorption, Intercalation

Coles, C.A. and Yong, R.N. (2002), Aspects of kaolinite characterization and retention of Pb and Cd. *Applied Clay Science*, **22** (1-2), 39-45.

Full Text: [A\App Cla Sci22, 39.pdf](A/App%20Cla%20Sci22,%2039.pdf)

Abstract: This study illustrates the complimentary nature of selected techniques for characterizing kaolinite. For the particular type of kaolinte studied, scanning electron micrographs revealed the presence of crystallites and mostly larger than clay-sized particles. These findings were in agreement with the low cation exchange capacity, low specific surface area, low zero point of charge and high purity that were determined for the kaolinite. Batch equilibrium tests were conducted on kaolinite suspensions that had been adjusted to pH 4 and pH 6. These suspensions were spiked with varying concentrations of Pb (as PbCl2) and Cd (as CdCl2). At equilibrium, the metal uptake was greater for the pH 6 suspensions than for the pH 4 suspensions, the metal uptake was generally greater when greater concentrations of metal had been used to spike the suspensions, and there was a reduction in suspension pH that accompanied the metal uptake. A comparison of the equilibrium curves of both metal retention and suspension pH, as a function of the initial metal concentration, combined with an analysis of metal speciation, provided evidence for the adsorption of both divalent (Pb2+ and Cd2+) and monovalent (PbCl+ and CdCl+) species by the kaolinite. Cation exchange was a primary retention mechanism and the order of selectivity for the pH 4 and pH 6 suspensions of kaolinite appeared to be Pb2+ > H+ > Cd2+. At higher pH and higher metal concentrations, there was an increase in Cd uptake relative to Pb uptake. This may have been a result of less competition between H+ ions and metal ions for adsorption sites, and because CdCl+ forms, at a lower salt concentration than PbCl+, and so a greater proportion of monovalent Cd was adsorbed. (C) 2002 Elsevier Science B.V All rights reserved.

Keywords: Kaolinite, Lead, Cadmium, Adsorption, Speciation, Organic-Matter, Surface-Area, Adsorption, Cadmium

Lee, S.Y. and Kim, S.J. (2002), Adsorption of naphthalene by HDTMA modified kaolinite and halloysite. *Applied Clay Science*, **22** (1-2), 55-63.

Full Text: [A\App Cla Sci22, 55.pdf](A/App%20Cla%20Sci22,%2055.pdf)

Abstract: The adsorption of the cationic surfactant hexadecyltrimethylammonium (HDTMA) by kaolinite and halloysite was studied. Fourier transformed infrared (FTIR) spectroscopic studies revealed a change of the surfactant arrangement with solution conditions. Naphthalene was partitioned into the organic phase created by the surfactant tails of the HDTMA modified kaolinite and halloysite. The adsorption isotherms for naphthalene were nearly linear, suggesting that adsorption could be described by a distribution process. The distribution coefficients were primarily affected by the amount of surfactant adsorbed. Adsorption of naphthalene, however, was particularly dependent on the arrangement of the surfactant cations. At high surface coverage (e.g., >60% cation exchange capacity, CEC), the bilayer surfactant structure formed on kaolinite adsorbed large amounts of naphthalene. On halloysite, HDTMA formed surfactant clusters, and no prominent increase of naphthalene adsorption even at high HDTMA loadings was observed. Thus, the clay mineral structure and morphology had a considerable influence on the surfactant arrangement responsible for partitioning hydrophobic organic contaminants (HOCs) such as naphthalene.

Keywords: Cationic Surfactant, Hexadecyltrimethylammonium, Kaolinite, Halloysite, Naphthalene, Adsorption

Montes-H, G., Duplay, J., Martinez, L., Geraud, Y. and Rousset-Tournier, B. (2003), Influence of interlayer cations on the water sorption and swelling-shrinkage of MX80 bentonite. *Applied Clay Science*, **23** (5-6), 309-321.

Full Text: [A\App Cla Sci23, 309.pdf](A/App%20Cla%20Sci23,%20309.pdf)

Abstract: The potential of water sorption and swelling-shrinkage in the expansive clays is practically defined by the nature of interlayer cations. The purpose of this paper is to estimate the effects of the cation saturation (Mg+, Ca+, Li+, Na+, and K+) on the swelling-shrinkage behaviour of the MX80 bentonite.

The MX80 bentonite (a “commercial clay”) was treated with concentrated solutions (1 N) of sodium, calcium, magnesium, potassium, and lithium chlorides. This treatment was made three times with constant agitation for 1 h. Then, the clay was washed three times with distilled water. The scanning transmission electron microscopy (STEM) and inductively coupled plasma atomic emission microscopy (ICP-AES) analyses were used to verify the efficiency of the cation saturation.

Finally, two techniques were employed to estimate the effect of the cation saturation on the swelling-shrinkage behaviour of the bentonite: the first one uses an isothermal system of water adsorption, where the water activity is controlled by a supersaturated salt solution. In the second, environmental scanning electron microscopy (ESEM), coupled with a digital image analysis (DIA) program, was used to estimate the swelling-shrinkage potential at different water activities. The swelling-shrinkage isotherms were always estimated on isolated aggregates.

The isotherms of water adsorption and swelling-shrinkage of the bentonite MX80 show that the amount of adsorbed water and the swelling-shrinkage potential depend directly on the interlayer cation. For example, the sodium bentonite presents an excellent capacity to swell while the lithium bentonite does not swell significantly at the aggregate scale. In addition, other textural properties may be modified by the cation saturation, such as the specific surface, the particle size, porosity, etc. (C) 2003 Elsevier B.V. All rights reserved.

Keywords: Swelling-Shrinkage, Interlayer Cations, Bentonite, Esem, Digital Image Analysis, Adsorption, System

Espantaleón, A.G., Nieto, J.A., Fernández, M. and Marsal, A. (2003), Use of activated clays in the removal of dyes and surfactants from tannery waste waters. *Applied Clay Science*, **24** (1-2), 105-110.

Full Text: [A\App Cla Sci24, 105.pdf](A/App%20Cla%20Sci24,%20105.pdf)

Abstract: A method is tested to reduce the pollution of effluents produced in the hide transformation process. Adsorption processes with clays could constitute a simple, selective and economical alternative to conventional physical–chemical treatments.

The adsorption capacity of natural and acid-activated bentonite and sepiolite for anionic dyes normally used in the tannery was compared with that of a conventional adsorbent such as activated carbon. Natural bentonite with a different level of acid activation was used to adsorb a non-ionic surfactant such as nonylphenol ethoxylated with 8 mol of ethylene oxide.

The capacity of sepiolite and acid-activated bentonite to adsorb anionic dyes normally used in the tannery was much greater than that of conventional adsorbents. A surfactant removal of 90% was achieved in approximately 10 min because of the high affinity between surfactant and adsorbent. Natural bentonite activated with 0.5 M H2SO4 was the most effective adsorbent for ethoxylated nonylphenol.

Keywords: Adsorption, Clays, Dyes, Non-ionic surfactant, Tannery

Shawabkeh, R.A. and Tutunji, M.F. (2003), Experimental study and modeling of basic dye sorption by diatomaceous clay. *Applied Clay Science*, **24** (1-2), 111-120.

Full Text: [A\App Cla Sci24, 111.pdf](A/App%20Cla%20Sci24,%20111.pdf)

Abstract: This paper presents a study on the adsorption of basic dye, Methylene blue, from an aqueous solution onto diatomaceous earth (diatomite). The effect of initial dye concentrations, adsorbent particle size and concentration, and agitation speed on adsorption was investigated. Adsorption isotherms obtained at different solutions temperatures revealed an irreversible adsorption with a capacity of 42 mmol dye/100 g diatomite reached within 10 min. This value slightly increases with increasing the solution temperature. A proposed correlation to describe the irreversible adsorption isotherm was introduced, which resulted in a better fit to the experimental data than that of Langmuir’s and Freundlich’s. Two simplified kinetics models, pseudo-first order and pseudo-second order, were tested to investigate the adsorption mechanisms. It was found that the kinetics of adsorption of Methylene blue onto the surface of diatomite at different operating condition are best described by the pseudo-first-order model.

Keywords: Adsorption, Diatomite, Modeling, Methylene Blue

? Yariv, S. (2004), The role of charcoal on DTA curves of organo-clay complexes: An overview. *Applied Clay Science*, **24** (3-4), 225-236.

Full Text: [2004\App Cla Sci24, 225.pdf](2004/App%20Cla%20Sci24,%20225.pdf)

Abstract: DTA of organo-clay complexes supplemented by other thermal analysis methods supplies information on the thermal reactions, properties and stability of the complex, the amount and properties of the adsorbed water in the organo-clay and on the bonding between the organic species and the clay. It is used to identify the mineral to differentiate between various complexes composed of the same clay and the same organic ligand and to establish their composition. During the gradual heating in oxidizing atmospheres the adsorbed organic material is oxidized, giving rise to significant exothermic peaks. DTA curves of organo-clays are divided into three regions: (1) the dehydration of the clay, (2) the thermal oxidation of the organic material and (3) the dehydroxylation of the clay. The exothermic oxidation reaction occurring during the gradual heating of the sample takes place in two steps, in the range 200-500 degreesC, oxidation of organic hydrogen and formation of water and charcoal, and 400-750 degreesC, oxidation of charcoal and formation of CO2. The exothermic peak temperatures depend on the mineral and on the organic compound and on the types of bonding between these two components of the organo-clay complex. The present communication concentrates in the role of the combustion of charcoal in the study of the fine structure of the complex and of the type of associations between the organic compound and the clay. (C) 2003 Elsevier B.V. All rights reserved.

Keywords: Acridine-Orange, Adsorption, Charcoal, Congo-Red, Crystal-Violet, Differential Thermal-Analysis, Dta, Mass-Spectroscopic Analysis, Montmorillonite, Organo-Clay Complexes, Palygorskite, Palygorskite, Sepiolite, Smectite, Smectite Minerals, Tg, Thermal Analysis, Water Evolution Curves

Nagy, N.M. and Kónya, J. (2004), The adsorption of valine on cation-exchanged montmorillonites. *Applied Clay Science*, **25** (1-2), 57-69.

Full Text: [A\App Cla Sci25, 57.pdf](A/App%20Cla%20Sci25,%2057.pdf)

Abstract: The interfacial reaction of valine was systematically studied on the surface of different cation-exchanged montmorillonites, namely calcium-, copper-, zinc-montmorillonite, and montmorillonite KSF. The exchanged cations were selected on the basis of stability of their valine complexes. At first the interfacial acid/base properties of cation exchanged montmorillonites were studied: the stability constants of the ion exchange processes on the layer charges were determined by radioisotopic labeling, the edge charges were studied by potentiometric titration and surface complexation model.

The adsorption was studied as a function of valine concentration, pH and time. The results were evaluated by a surface complexation model and the possible surface complexes and their stability products were given. The results show what kind of interactions are possible in the ternary system of montmorillonite/valine/metal ions and how the metal ions can effect on these interactions. The assumed processes are: (1) the adsorption of valine in the interlayer space, where valine is adsorbed in protonated form, (2) the adsorption of valine on the protonated aluminol sites, and (3) the adsorption of positively charged complexes on the deprotonated silanol sites, if the exchangeable cation forms a positive complex with valine. The total amount of the adsorbed valine and the ratio of the different adsorption processes is determined by the affinity of metal ions to the layer charges and by the stability of the metal ion–valine complexes in solution.

Keywords: Adsorption, Cation-Exchanged Montmorillonites, Surface Complexation, Valine

Missana, T., García-Gutiérrez, M. and Alonso, Ú. (2004), Kinetics and irreversibility of cesium and uranium sorption onto bentonite colloids in a deep granitic environment. *Applied Clay Science*, **26** (1-4), 137-150.

Full Text: [A\App Cla Sci26, 137.pdf](A/App%20Cla%20Sci26,%20137.pdf)

Abstract: Sorption of radionuclides onto a stable colloidal phase may significantly enhance their transport in groundwater. A key point, to be analysed to assess the relevance of colloids in the safety of a deep geological radioactive waste repository, is the irreversibility of the colloid/radionuclide bond.

In this work, sorption and desorption kinetics of cesium and uranium(VI) onto bentonite colloids in a granitic reduced environment was studied by means of batch experiments, carried out in anoxic conditions under N2 atmosphere. Sorption kinetics was followed during 18 weeks, and sorption isotherms were also carried out to get additional information on sorption mechanisms. The water used in all the experiments was an alkaline, low ionic strength (pH = 9.5 and I = 1×10−3M) granitic groundwater from the NAGRA’s Grimsel Test Site (GTS), Switzerland, which also presents reduced Eh (−200 mV). In this water, bentonite colloids were shown to be stable during several months.

Both cesium and uranium presented a nonlinear sorption behaviour in the range of concentration investigated. In kinetic experiments, the measured log Kd for Cs ([Cs] = 1×10−7 M) was 3.94±0.15, and this value did not show significant variations with time. However, the adsorption of cesium on bentonite colloids involves two reactions, a rapid exchange on planar sites (hours) and a slower component (days) in which cesium diffuses to less available but highly selective sites. This slow process, that can be evidenced only when very low tracer concentrations are used (<1×10−9 M), is most probably responsible for the fixation of a fraction of the sorbed cesium, and for the partial sorption irreversibility shown in desorption tests. Kd values measured after several desorption experiments increased significantly with the age of the sorption complex. For example, for the sample with 1-day contact time, the second desorption Kd was ~8600 ml/g whereas the 5 and 8 weeks contact time samples showed second desorption Kd ~15 000 and ~30 000 ml/g, respectively.

The measured log Kd for U ([U(VI)] = 4×10−7 M) varied from 2.91 to 3.21 (±0.15) during 18 weeks of the kinetic experiment. The main variation of Kd values took place in the first 4 weeks, and then a very slow increasing trend was observed, which could be probably attributed to a partial reduction of U(VI) to U(IV).

In desorption tests with uranium, desorption Kds were independent on the initial contact time. Nevertheless, a certain sorption/desorption hysteresis was observed, which is most probably due to the contribution of surface complexation reactions, at the edge sites of clay colloids, to uranium sorption. Hence, U sorption is not completely reversible.

Keywords: Bentonite, Cesium, Colloids, Radioactive waste, Sorption, Uranium

Payne, T.E., Davis, J.A., Lumpkin, G.R., Chisari, R. and Waite, T.D. (2004), Surface complexation model of uranyl sorption on Georgia kaolinite. *Applied Clay Science*, **26** (1-4), 151-162.

Full Text: [A\App Cla Sci26, 151.pdf](A/App%20Cla%20Sci26,%20151.pdf)

Abstract: The adsorption of uranyl on standard Georgia kaolinites (KGa-1 and KGa-1B) was studied as a function of pH (3–10), total U (1 and 10 μmol/l), and mass loading of clay (4 and 40 g/l). The uptake of uranyl in air-equilibrated systems increased with pH and reached a maximum in the near-neutral pH range. At higher pH values, the sorption decreased due to the presence of aqueous uranyl carbonate complexes. One kaolinite sample was examined after the uranyl uptake experiments by transmission electron microscopy (TEM), using energy dispersive X-ray spectroscopy (EDS) to determine the U content. It was found that uranium was preferentially adsorbed by Ti-rich impurity phases (predominantly anatase), which are present in the kaolinite samples. Uranyl sorption on the Georgia kaolinites was simulated with U sorption reactions on both titanol and aluminol sites, using a simple non-electrostatic surface complexation model (SCM). The relative amounts of U-binding >TiOH and >AlOH sites were estimated from the TEM/EDS results. A ternary uranyl carbonate complex on the titanol site improved the fit to the experimental data in the higher pH range. The final model contained only three optimised log K values, and was able to simulate adsorption data across a wide range of experimental conditions. The >TiOH (anatase) sites appear to play an important role in retaining U at low uranyl concentrations. As kaolinite often contains trace TiO2, its presence may need to be taken into account when modelling the results of sorption experiments with radionuclides or trace metals on kaolinite.

Keywords: Adsorption, Anatase, Kaolinite, Surface Complexation, Uranium

Brigatti, M.F., Colonna, S., Malferrari, D., Medici, L. and Poppi, L. (2005), Mercury adsorption by montmorillonite and vermiculite: A combined XRD, TG-MS, and EXAFS study. *Applied Clay Science*, **28** (1-4), 1-8.

Full Text: [2005\App Cla Sci28, 1.pdf](2005/App%20Cla%20Sci28,%201.pdf)

Abstract: Synchrotron-based extended X-ray absorption fine structure spectroscopy (EXAFS), X-ray diffraction at room and high temperature, thermal analyses combined with mass spectrometry of evolved gas, and chemical analyses contributed to assess the influence of mercury on montmorillonite and vermiculite layers.

The adsorbed Hg amount was higher for montmorillonite (Hg = 37.7 meq/100 g) than for vermiculite (Hg = 28.0 meq/100 g). The basal spacing for the Hg treated samples was 15.2 (montmorillonite) and 14.5 Å (vermiculite). Thermal and evolved gas spectrometry analyses suggest that Hg was released at T≅230 °C and at 600 °C for montmorillonite, but at 550, 800 and 860 °C for vermiculite.

The effect of temperature on Hg release is also apparent when the basal spacing at 230 °C for montmorillonite (d001 = 10.3 Å) is compared to that for vermiculite (d001 = 11.8 Å).

EXAFS analyses provide qualitative evidence that oxygen atoms occupy the first coordination shell of Hg in both clay minerals. The best fit between observed and calculated spectra is obtained when montroydite is assumed as a reference model compound.

Keywords: EXAFS, Montmorillonite, Vermiculite, Mercury, X-ray Diffraction, Adsorption

Zhang, G.K., Liu, Y., Xie, Y., Yang, X., Hu, B., Ouyang, S.X., Liu, H.X. and Wang, H.Y. (2005), Zinc adsorption on Na-rectorite and effect of static magnetic field on the adsorption. *Applied Clay Science*, **29** (1), 15-21.

Full Text: [2005\App Cla Sci29, 15.pdf](2005/App%20Cla%20Sci29,%2015.pdf)

Abstract: Rectorite is a kind of rare clay minerals. In this work, the sorption of Zn2+ on Na-rectorite and the effects of static magnetic field on the sorption have been studied. The result from this study indicated that: (1) apparent equilibrium for the sorption of zinc onto Na-rectorite is attained within the first hour; (2) the maximum of the increment of Zn2+ adsorbed by Na-rectorite is obtained between pH 4 and pH 6; (3) magnetic treatment enhances the zeta potential of Na-rectorite dispersions in the absence of Zn2+ and reduces that of the dispersions in the presence of Zn2+; (4) magnetic treatment promotes the sorption of Zn2+ onto Na-rectorite, especially at the low Zn2+ concentration; (5) the effects of static magnetic field decrease the pH of Na-rectorite dispersions whether containing zinc or not. The mechanisms of static magnetic field on the sorption of Zn2+ on Na-rectorite were discussed.

Keywords: Na-Rectorite, Zinc, Magnetic Field, Zeta Potential, Adsorption

Bergaoui, L., Lambert, J.F. and Prost, R. (2005), Cesium adsorption on soil clay: macroscopic and spectroscopic measurements. *Applied Clay Science*, **29** (1), 23-29.

Full Text: [2005\App Cla Sci29, 23.pdf](2005/App%20Cla%20Sci29,%2023.pdf)

Abstract: We studied the interaction of cesium cation in the aqueous phase with soil clay by combining microscopic and macroscopic data. Investigations concerning selective sorption of cesium by this soil clay are presented. The sample studied is selective for concentrations <2×10−3 mol/l in solution. Far-infrared (FIR) shows the presence of two selective adsorption sites. At higher loadings, 133Cs MAS-NMR shows that most cesium is essentially adsorbed on external sites which are not very selective. FIR and adsorption data lead to the conclusion that collapsed illite clay is responsible for the selectivity observed at low concentration. However, cesium cations can diffuse between illite layers only if these layers are involved in a mixed smectite–illite mineral.

Keywords: Cesium Adsorption, Selectivity, Illite–Smectite, Far-Infrared, 133Cs MAS-NMR

Okada, T., Morita, T. and Ogawa, M. (2005), Tris(2,2’-bipyridine)ruthenium(II)-clays as adsorbents for phenol and chlorinated phenols from aqueous solution. *Applied Clay Science*, **29** (1), 45-53.

Full Text: [2005\App Cla Sci29, 45.pdf](2005/App%20Cla%20Sci29,%2045.pdf)

Abstract: The adsorptive properties of tris(2,2’-bipyridine)ruthenium(II)-clay intercalation compounds, which were synthesized through cation exchange reactions from synthetic saponite (Sumecton SA), synthetic fluoro-tetrasilicic mica and montmorillonite (Kunipia F) for phenols were investigated. The adsorption isotherms of phenols for the tris(2,2’-bipyridine)ruthenium(II)-clays from aqueous solutions followed Langmuir type, indicating strong adsorbate–adsorbent interactions. The basal spacings of the tris(2,2’-bipyridine)ruthenium(II)-clays did not change through the adsorption of phenols. This means that the adsorbed phenols existed in the interlayer nanopore created by the tris(2,2’-bipyridine)ruthenium(II) in the interlayer space of the tris(2,2’-bipyridine)ruthenium(II)-clays. The adsorbed amounts of phenols varied depending upon the nature of clays. One of the factors responsible for the variation in the adsorbed amounts is the layer charge density of smectites. Relatively low-layer charge density of saponite led to relatively large pore volume in the interlayer space. The adsorbed amounts of 2,4-dichlorophenol for the tris(2,2’-bipyridine)ruthenium(II)-saponite and the tris(2,2’-bipyridine)ruthenium(II)-montmorillonite were the largest among three phenols. It is thought that the interactions between tris(2,2’-bipyridine)ruthenium(II) cation and phenols played an important role in the adsorption of these phenols.

Keywords: Adsorption, Organoclays, Phenol, Chlorinated Phenols, Tris(2,2’-Bipyridine)Ruthenium(II), Synthetic Saponite, Synthetic Fluoro-Tetrasilicic Mica, Montmorillonite

? Tsai, W.T., Chang, M., Lai, C.W. and Lo, C.C. (2005), Adsorption of basic dyes in aqueous solution by clay adsorbent from regenerated bleaching earth. *Applied Clay Science*, **29** (2), 149-154.

Full Text: [2005\App Cla Sci29, 149.pdf](2005/App%20Cla%20Sci29,%20149.pdf)

Abstract: Regenerated bleaching earth was used for adsorption and adsorption kinetics of the three basic dyes violet 4, violet 3 and red 9 from aqueous solution. The rate of adsorption has been investigated under various parameters such as initial dye concentration, pH and temperature. Two simple models (i.e., pseudo-second-order reaction and intra-particle diffusion) have been tested to predict the adsorption parameters. The adsorption of the basic dyes by regenerated bleaching earth at lower initial concentrations follows the order: basic violet 4>basic violet 3>basic red 9, parallel to the molecular weights and molecular sizes of the basic dyes. Further, the adsorption kinetic of the basic dyes can be well described with the pseudo-second-order reaction model. Based on the isotherm data obtained from the fittings of the adsorption kinetics, the Langmuir and Freundlich models for adsorption of basic violet 4 and basic red 9 yield relatively better fits than that for adsorption of basic violet 3.

Keywords: Liquid-Phase Adsorption, Basic Dye, Regenerated Bleaching Earth, Inetic Modeling, Isotherm

? Adebowale, K.O., Unuabonah, I.E. and Olu-Owolabi, B.I. (2005), Adsorption of some heavy metal ions on sulfate- and phosphate-modified kaolin. *Applied Clay Science*, **29** (2), 145-148.

Full Text: [2005\App Cla Sci29, 145.pdf](2005/App%20Cla%20Sci29,%20145.pdf)

Abstract: Kaolin (bright white lumps) from Ubulu-Ukwu in Delta State of Nigeria was modified with 200 μg mL−1 of phosphate and sulphate anions to give phosphate- and sulfate-modified adsorbents, respectively. The adsorption of four metal ions (Pb2+, Cd2+, Zn2+, and Cu2+) was studied as a function of metal ions concentration.

The metal ions showed stronger affinity for the phosphate-modified adsorbent with Pb2+, Cu2+, Zn2+, and Cd2+ giving an average of 93.28%, 80.94%, 68.99%, and 61.44% uptake capacity. The order of preference for the various adsorbents shown by the metal ions was as follows:

Pb2+>Cu2+>Zn2+>Cd2+

Desorption studies showed that the phosphate-modified adsobent had the highest affinity for the metal ions, followed by the sulfate-modified clay while the unmodified clay had the least affinity.

The experimental data were fitted by both the Langmuir and Freundlich models.

Keywords: Kaolin, Heavy Metal Ions, Adsorption

? de Bussetti, S.G. and Ferreiro, E.A. (2005), Effect on 2,2’-bipyridine adsorption of poly(vinyl alcohol) adsorbed on Na+-kaolinite. *Applied Clay Science*, **29** (3-4), 207-214.

Full Text: [2005\App Cla Sci29, 207.pdf](2005/App%20Cla%20Sci29,%20207.pdf)

Abstract: The adsorption (pH 6) of 2,2’-bipyridine (BP) on Na+-kaolinite and on samples of the same clay containing 4.35 and 7.45 mg/g, respectively, of previously adsorbed poly(vinyl alcohol) (PVA) was studied. Specific adsorption of BP decreases with increasing clay particle size in the suspension as a result of particle association. Aqueous suspensions with a 1–4% concentration of kaolinite exhibit flocculation in the absence or presence of PVA, forming clusters of 43–64 units of single clay particles. The PVA adsorbed on the surface of sodium kaolinite particles causes partial dispersion of the kaolinite in the aqueous suspension; however, 7.45 mg/g of PVA adsorption or even lower (4.35 mg/g) is not able to fully impede the association of kaolinite particles.

Keywords: Adsorption, Bipyridine,Flocculation, Kaolinite, Polyvinyl Alcohol

? Pushpaletha, P., Rugmini, S. and Lalithambika, M. (2005), Correlation between surface properties and catalytic activity of clay catalysts. *Applied Clay Science*, **30** (3-4), 141-153.

Full Text: [2005\App Cla Sci30, 141.pdf](2005/App%20Cla%20Sci30,%20141.pdf)

Abstract: Surface properties always have a strong bearing on catalytic activity. Modification using mineral acids results in the variation of properties like acidity, cation exchange capacity, surface area and porosity of a clay mineral. The present investigation involves the preparation, chemical characterization and surface property evaluation of a set of catalysts, prepared by the acid activation of bentonitic clay collected from Kutch district of Gujarat, India. Chemical characterization was carried out by conventional chemical analysis, physical characterization by XRD, FTIR and DTA and surface property evaluation by surface area, acidity and cation exchange capacity measurements. Activity of the catalysts was monitored by the test reaction, benzylation of benzene. It was found that there is very good correlation among catalytic activity, acidity and cation exchange capacity. The catalyst having the maximum cation exchange capacity showed the maximum conversion in the test reaction. Correlation between iron content and catalyst performance has also been examined. The results obtained in the benzylation of substituted benzenes and polycyclic hydrocarbons are presented. The performance of the catalysts has been compared with the commercial catalysts, K 10 and KSF/0.

Keywords: Bentonite, Acid Activation, Acidity, Benzylation, Cation Exchange Capacity

? Gupta, S.S. and Bhattacharyya, K.G. (2005), Interaction of metal ions with clays: I. A case study with Pb(II). *Applied Clay Science*, **30** (3-4), 199-208.

Full Text: [2005\App Cla Sci30, 199.pdf](2005/App%20Cla%20Sci30,%20199.pdf)

Abstract: Pb(II) adsorption was studied under different conditions (pH, time, metal ion concentration, clay amount, temperature) on kaolinite, montmorillonite, and their poly(hydroxo)zirconium (ZrO–kaolinite, ZrO–montmorillonite) and tetrabutylammonium (TBA–kaolinite, TBA–montmorillonite) derivatives. All samples were calcined (ZrO-derivatives at 773 K, TBA-derivatives at 973 K) before using as adsorbents. The data were interpreted assuming first- and second-order kinetics. The rate constants including the pore diffusion rate constant are reported. The adsorption data could be fitted with Freundlich and Langmuir isotherms, and the coefficients indicated favorable adsorption of Pb(II) on the clays. Determination of the thermodynamic parameters, Δ*H*, Δ*S*, and Δ*G* showed the adsorption to be exothermic accompanied by decrease in entropy and Gibbs energy.

Keywords: Kaolinite, Montmorillonite, Poly(Hydroxo)Zirconium Clay, Tetrabutyl-Ammonium Clay, Adsorption

? Marlohar, D.M., Noeline, B.F. and Anirudhan, T.S. (2006), Adsorption performance of Al-pillared bentonite clay for the removal of cobalt(II) from aqueous phase. *Applied Clay Science*, **31** (3-4), 194-206.

Full Text: [2006\App Cla Sci31, 194.pdf](2006/App%20Cla%20Sci31,%20194.pdf)

Abstract: In this research, the natural bentonite clay collected from Ashapura Clay Mines, Gujarat State, India, was utilized as a precursor to produce aluminium-pillared bentonite clay (Al-PILC) for the removal of cobalt(II) [Co(II)] ions from aqueous solutions. The original bentonite clay and Al-PILC were characterized with the help of chemical analyses, methylene blue (MB) adsorption isotherm, powder X-ray diffraction (XRD), scanning electron microscopy (SEM) and infrared spectroscopy (IR), while the thermal stability of the samples were studied using thermogravimetry (TG). Surface charge density of the samples as a function of pH was investigated using potentiometric titrations. Adsorption experiments were conducted under various conditions, i.e., pH, contact time, initial concentration, ionic strength, adsorbent dose and temperature. The most effective pH range for the removal of Co(II) ions was found to be 6.0-8.0. The maximum adsorption of 99.8% and 87.0% took place at pH 6.0 from an initial concentration of 10.0 and 25.0 mg 1-1, respectively. Kinetic studies showed that an equilibrium time of 24 h was needed for the adsorption of Co(II) ions on Al-PILC and the experimental data were correlated by either the external mass transfer diffusion model for the first stage of adsorption and the intraparticle mass transfer diffusion model for the second stage of adsorption. The intraparticle mass transfer diffusion model gave a better fit to the experimental data. The Arrhenius and Eyring equations were applied to the data to determine the kinetic and thermodynamic parameters for explaining the theoretical behaviour of the adsorption process. The equilibrium isotherm data were analyzed using the Langmuir, Freundlich and Scatchard isotherm equations and the adsorption process was reflected by Freundlich isotherm. The efficiency of the Al-PILC was assessed by comparing the results with those on a commercial ion exchanger, Ceralite IRC-50. The suitability of the Al-PILC for treating Co(II) solutions was tested using simulated nuclear power plant coolant samples. Acid regeneration was tried for several cycles with a view to recover the adsorbed Co(II) and also to restore the adsorbent to its original state. (c) 2005 Published by Elsevier B.V.

Keywords: Bentonite, Pillared Clay, Adsorption Kinetics, Isotherms, Cobalt(II), Desorption, Heavy-Metals, Waste-Water, Kinetics, Sorption, Nickel, Copper, Montmorillonite, Mercury(II), Kaolinite, Sorbent

? Du, Y.J. and Hayashi, S. (2006), A study on sorption properties of Cd2+ on Ariake clay for evaluating its potential use as a landfill barrier material. *Applied Clay Science*, **32** (1-2), 14-24.

Full Text: [2006\App Cla Sci32, 14.pdf](2006/App%20Cla%20Sci32,%2014.pdf)

Abstract: To assess the potential use of Ariake clay from Kyushu region of Japan as a landfill barrier material, the results of a series of batch tests are presented to investigate on the effects of solid–solution contact time, solid : solution ratio and pH of solution on sorption of Cd2+ and Pb2+ on the Ariake clay. The results show that in addition to the three investigated factors, solid : solution ratio seems to be the crucial controlling factor. The Freundlich sorption parameters determined from the batch tests are applied to a typical landfill site in which the Ariake clay is used as a soil barrier. The impacts of the landfill on the underlying aquifer are assessed through numerical analysis. Based on the analysis results, the significance of selecting proper solid : solution ratio for determining sorption parameters from batch tests is discussed.

Keywords: Ariake Clay, Barrier, Landfill, Heavy Metal, Impact, Sorption, Partition Coefficient

? Du, Y.J. and Hayashi, S. (2006), A study on sorption properties of Cd2+ on Ariake clay for evaluating its potential use as a landfill barrier material. *Applied Clay Science*, **32** (1-2), 14-24.

Full Text: [2006\App Cla Sci32, 14.pdf](2006/App%20Cla%20Sci32,%2014.pdf)

Abstract: To assess the potential use of Ariake clay from Kyushu region of Japan as a landfill barrier material, the results of a series of batch tests are presented to investigate on the effects of solid–solution contact time, solid : solution ratio and pH of solution on sorption of Cd2+ and Pb2+ on the Ariake clay. The results show that in addition to the three investigated factors, solid : solution ratio seems to be the crucial controlling factor. The Freundlich sorption parameters determined from the batch tests are applied to a typical landfill site in which the Ariake clay is used as a soil barrier. The impacts of the landfill on the underlying aquifer are assessed through numerical analysis. Based on the analysis results, the significance of selecting proper solid: solution ratio for determining sorption parameters from batch tests is discussed.

Keywords: Ariake clay, Barrier, Landfill, Heavy metal, Impact, Sorption, Partition coefficient

? Hizal, J. and Apak, R. (2006), Modeling of cadmium(III) adsorption on kaolinite-based clays in the absence and presence of humic acid. *Applied Clay Science*, **34** (3-4), 232-244.

Full Text: [2006\App Cla Sci34, 232.pdf](2006/App%20Cla%20Sci34,%20232.pdf)

Abstract: Cadmium adsorption on kaolinite-based clays in the absence and presence of humic acid was modeled with the aid of the FITEQL 3.2 computer program using a modified Langmuir approach for capacity calculations. Formation of surface-metal ion and surface-humate-metal ion complexes was assumed using the DLM approach. As Cd(II) adsorption was ionic strength-dependent, the adsorption experiments were carried out in solutions containing two different concentrations of an inert electrolyte (0.1 M and 0.005 M NaClO4). The surface sites responsible for the adsorption were assumed to be the permanent charges, =S1OH silanol groups and carboxyl groups having pK(a) values close to that of the silanol groups, and =S2OH aluminol groups and phenol groups with pKa values close to that of the aluminol groups, because the studied clays (partly composed of clay soil) contained organic carbon. Cd2+ ions were assumed to bind to the surface in the form of outer-sphere X-2(2-) Cd2+ and inner-sphere =SOCd+ monodentate complexes. When humic acid was added, Cd(II) adsorption was modeled using a multi-site binding model by the aid of FITEQL3.2. The fit between model and experimental values was excellent in each case. Since the stability of the ternary surface complexes in the presence of humic acid was higher than that of the corresponding binary surface-cadmium ion complexes, the adsorption vs. pH curves were much steeper (and distinctly S-shaped) compared to the tailed curves observed in binary clay-cadmium ion systems. The clay mineral in the presence of humic acid probably behaved more like a chelating ion-exchanger for heavy metal ions than as a simple inorganic ion exchanger. (C) 2006 Elsevier B.V. All rights reserved.

Keywords: Cadmium(II), Kaolinite, Clays, Humic Acid, Adsorption, Modeling, Fiteql, Dlm, Surface Complexation Model, Dissolved Organic-Matter, Ion-Exchange Processes, Silica-Gel Surface, Red Mud, Calcium-Montmorillonite, Unconventional Sorbents, Lead(II) Adsorption, Complexing Ligands, Metal-Adsorption

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Full Text: [2007\App Cla Sci35, 47.pdf](2007/App%20Cla%20Sci35,%2047.pdf)

Abstract: The experimental process of adsorption of Pb(II) and Cd(II) onto clay mineral is studied here in order to evaluate the capacity for removal for these two heavy metal ions. This study is performed under various conditions such as initial solution pH, chemical clay modification conditions, initial metal ion concentration and contact time. The experimental isotherm data are analysed using Temkin, Langmuir and Freundlich equations and it is shown that models produce comparable equilibrium correlation results. The isotherm curves show very clearly the selectivity of the clay for the lead ions but also significant amounts of cadmium are removed as well. Adsorption kinetics data were tested using pseudo-first-order and Intraparticle diffusion models. Adsorption mechanism studies revealed that the process was complex and followed both surface adsorption and particle diffusion. The rate-controlling parameters and diffusion coefficients were determined using the Crank and McKay diffusion models. It was found that the adsorption occurs through film diffusion and the particle diffusion becomes the rate-determining step for each metal ion. (c) 2006 Elsevier B.V. All rights reserved.

Keywords: Acid, Activated Carbon, Adsorption, Adsorption, Adsorption Kinetics, Bone Char, Cadmium, Capacity, Cd(II), Cd2+, Clay, Clay Mineral, Diffusion, Diffusion-Model, Dispersions, Equilibrium, Experimental, Freundlich, Heavy Metal, Heavy Metal Ions, Heavy-Metal Removal, Intraparticle Diffusion, Ion-Exchange, Isotherm, Isotherms, Kinetics, Langmuir, Lead, Mechanism, Metal, Metal Ions, Models, Modification, Particle Diffusion, Pb(II), Pb2+, pH, Pseudo-First-Order, Removal, Rights, Solution, Sorption, Stevensite, Surfactant-Modified Montmorillonite

? Smičiklas, I., Dimović, S. and Plećaš, I. (2007), Removal of Cs1+, Sr2+ and Co2+ from aqueous solutions by adsorption on natural clinoptilolite. *Applied Clay Science*, **35** (1-2), 139-144.

Full Text: [2007\App Cla Sci35, 139.pdf](2007/App%20Cla%20Sci35,%20139.pdf)

Abstract: The adsorption properties of local clinoptilolite (Serbia) towards Cs+, Co2+, and Sr2+ were investigated by batch equilibration technique. The influence of equilibration time, initial metal cation concentration, solution pH and presence of EDTA on these properties was studied and discussed. Kinetic data were found to be well fitted with pseudo-second order kinetic model. Cs+ is preferably adsorbed by the natural clinoptilolite, followed by Sr2+ and Co2+. The Langmuir adsorption isotherm was used to determine the adsorption capacities from both single and mixed metal solutions. At pH range of 3–12 the adsorption of Cs+ remains almost constant, while at low pH (2–3) the adsorption is lesser. At initial pH range of 2–10 adsorption of Sr2+ remains approximately stable, whereas at initial pH > 10 adsorption increases significantly. The adsorption of Co2+ is low at low pH but increased remarkably with increasing pH and precipitated at pH > 8. Cs+ adsorption on the clinoptilolite was not affected by the presence of EDTA, while the presence of EDTA hinders the adsorption of Co2+ and Sr2+ on clinoptilolite.

Keywords: Clinoptilolite, Metal Immobilization, Equilibrium Isotherm, Kinetics

? Lazarević, S., Janković-Častvan, I., Jovanovic, D., Milonjic, S., Janacković, D. and Petrović, R. (2007), Adsorption of Pb2+, Cd2+ and Sr2+ ions onto natural and acid-activated sepiolites. *Applied Clay Science*, **37** (1-2), 47-57.

Full Text: [2007\App Cla Sci37, 47.pdf](2007/App%20Cla%20Sci37,%2047.pdf)

Abstract: The adsorption mechanisms of Pb2+, Cd2+ and Sr2+ ions on natural sepiolite and the influence of acid treatment on the adsorption capacity of sepiolite were investigated.

The point of zero charge pH(pzc), is 7.4 +/- 0.1 for natural sepiolite and 6.9 +/- 0.1 for partially acid-activated sepiolite. The shift of the pH(pzc) of sepiolites toward lower pH values in solutions of Ph2+ and Cd2+ ions indicates that specific adsorption of these cations on natural and acid-activated sepiolites occurred, which was more pronounced for Pb2+ ions than for Cd2+ ions. There was no shift of the pH(pzc) in Solution containing Sr2+ ions, suggesting that specific adsorption of this cation did not occur.

The affinity for ion exchange with the Mg2+ ions from the sepiolite structure was the highest for Pb2+ ions, then Cd2+, whereas the affinity for Sr2+ ions was negligible. The adsorption isotherms suggest that the sequence of the efficiency of the sepiolites adsorption is Ph2+>Cd2+>Sr2+. The retention of Pb2+ and Cd2+ ions by sepiolite occurs dominantly by specific adsorption and exchange of Mg2+ ions from the sepiolite structure. The concentration in the external outer sphere of the Stem layer by electrostatic forces is the dominant mechanism for the retention of Sr2+ ions on the surface of sepiolites.

Despite increases in the surface areas upon acid activation, improvements in the adsorption were not observed, as a result of the decreasing number of Mg-OH groups, as main centers for specific adsorption, and the number of Mg2+ ions available for ion exchange with Pb2+, Cd2+ and Sr2+ ions. The removal of Mg-OH groups from the sepiolite also resulted in a decrease in the point of zero charge and an increase of the relative surface acidity, from 2.6 +/- 0.1 for the natural to 6.4 +/- 0.1 for the acid-activated sepiolite. (C) 2006 Elsevier B.V. All rights reserved.

Keywords: Sepiolite, Acid Treatment, Adsorption, Heavy Metals, Sr2+ Ion, Oxide-Water Interface, Aqueous-Solutions, Surface-Ionization, Complexation, Cadmium, Charge, Removal, Kinetics, Sorption, Silica

? Shirvani, M., Shariatmadari, H. and Kalbasi, M. (2007), Kinetics of cadmium desorption from fibrous silicate clay minerals: Influence of organic ligands and aging. *Applied Clay Science*, **37** (1-2), 175-184.

Full Text: [2007\App Cla Sci37, 175.pdf](2007/App%20Cla%20Sci37,%20175.pdf)

Abstract: Investigations on the desorption rate of heavy metal ions from the main soil colloidal components is crucial to better understand the mobility and bioavailability of metals in the environment. The effect of acetate (ACT), citrate (CIT) and desferrioxamine B (DFOB) on the kinetics of cadmium (Cd) desorption from palygorskite and sepiolite, as two important fibrous silicate clay minerals of many arid and semi-arid region soils, were investigated and several kinetic models including pseudo first- and pseudo second-order, Elovich, power function and parabolic diffusion equations were tested to describe the time-dependent Cd desorption data. The influence of initial contact time (24 h or 31 days) between the adsorbed Cd ions and the minerals, on the rate and extent of subsequent Cd desorption was also studied. Among the kinetic equations tested, the pseudo second-order model generally gave the best fits to experimental kinetic data with r2 values > 0.97. Addition of the organic ligands generally led to increases in the extent and rate of Cd desorption from the minerals; however, the enhancement effect of DFOB was more pronounced. Increasing the initial contact period between Cd and the minerals from 24 h to 31 d, caused subsequent slower rates and smaller proportions of Cd desorbed to the solutions. The mobility and bioavailability of Cd, therefore, may become less pronounced with increasing the metal contact time with palygorskite- and sepiolite-containing soils.

Keywords: Acetate, Acids, Act, Aging, Aqueous-Solutions, Availability, Bioavailability, Cadmium, Cadmium Desorption, Cd, Cd Release, Citrate, Clay, Clay Minerals, Cobalt Desorption, Contact Period, Contact Time, Desferrioxamine B, Desorption, Desorption Rate, Diffusion, Elovich, Environment, Equations, Experimental, Function, Heavy Metal, Heavy Metal Ions, Heavy-Metal, Iron, Kinetic, Kinetic Equations, Kinetic Models, Kinetics, Ligands, Metal, Metal Ions, Metals, Minerals, Mobility, Model, Models, Organic, Organic Ligands, Palygorskite, Palygorskite, Parabolic Diffusion, Power Function, Pseudo Second Order, Pseudo Second-Order, Pseudo Second-Order Model, Pseudo-Second-Order, Rate, Second Order, Semi-Arid Region, Semiarid Region, Sepiolite, Sepiolite, Silicate, Soil, Soils, Solutions, Sorption, Time

? Baskaralingam, P., Pulikesi, M., Ramamurthi, V. and Sivanesan, S. (2007), Modified hectorites and adsorption studies of a reactive dye. *Applied Clay Science*, **37** (1-2), 207-214.

Full Text: [2007\App Cla Sci37, 207.pdf](2007/App%20Cla%20Sci37,%20207.pdf)

Abstract: Hectorite has been modified by two different cationic surfactants namely cetyldimethyl benzylammonium chloride and cetylpyridinium chloride for the adsorption of an anionic dye, C.I. Reactive Orange 122. The modified hectorites were characterized by XRD, SEM and BET analyses. Batch experiments were carried out for the adsorption process in terms of effect of pH, adsorbent dosage, contact time, effect of salts and different dye concentrations. Experimental results show that acidic pH favours maximum colour removal. The data are well fitted by Langmuir isotherm and the adsorption capacity for cetyldimethyl benzylammonium hectorite (CDBA-hect) and cetylpyridinium hectorite (CP-hect) have been found to be 78 and 84 mg/g respectively. Kinetic studies were fitted with the pseudo-second-order kinetic model. (C) 2007 Elsevier B.V. All rights reserved.

Keywords: Acid Dye, Adsorbent, Adsorption, Adsorption Capacity, Aqueous-Solutions, BET, Capacity, Cetylpyridinium Chloride, Chloride, Clay-Minerals, Dye, Experiments, Ionic-Strength, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Isotherm, Metal-Ions, Model, Modified Hectorite, Montmorillonite, pH, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Reactive Dye, Reactive Orange 122, Removal, Rights, Salts, Sem, Silica, Sorption, Surfactants, XRD

? Yan, L.G., Wang, J., Yu, H.Q., Wei, Q., Du, B. and Shan, X.Q. (2007), Adsorption of benzoic acid by CTAB exchanged montmorillonite. *Applied Clay Science*, **37** (3-4), 226-230.

Full Text: [2007\App Cla Sci37, 226.pdf](2007/App%20Cla%20Sci37,%20226.pdf)

Abstract: This paper reports the adsorption of benzoic acid from water on cetyl trimethylammonium exchanged montmorillonite (CTAB-montmorillonite). Important factors are the adsorbent concentration, ionic strength, equilibrium time and pH. The largest adsorption is at pH 9. The adsorption kinetics data fitted the pseuclo-second-order equation. The adsorption isothenns at different pH were linear indicating a partition mechanism. Up to about 61% of the dissolved benzoic acid was adsorbed by CTAB-montmorillonite. These results indicate that CTAB-montmorillonite is a potential adsorbent for benzoic acid. (c) 2007 Elsevier B.V. All rights reserved.

Keywords: Acid, Activated Carbon, Adsorbent, Adsorbent Concentration, Adsorbents, Adsorption, Adsorption Kinetics, and pH, Bentonites, Benzoic Acid, Clays, Concentration, CTAB, Dissolved, Equilibrium, Equilibrium Time, Ionic Strength, Kaolinite, Kinetics, Linear, Mechanism, Molecules, Montmorillonite, Organo-Montmorillonite, Paper, Partition, pH, Phenol, Potential, Sorption, Strength, Surfactant, Tetramethylammonium, Time, Water

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Full Text: [2008\App Cla Sci38, 219.pdf](2008/App%20Cla%20Sci38,%20219.pdf)

Abstract: The adsorption of Th(IV) onto Al-pillared rectorite as a function of rectorite concentration, Th concentration, pH, ionic strength, temperature, soil humic acid (HA) and fulvic acid (FA) was studied by using batch technique under ambient condition. The results indicated that the adsorption of Th(IV) onto Al-pillared rectorite strongly depended on pH and ionic strength, and the adsorption of Th(IV) increased with increasing Al-pillared rectorite concentration. The presence of HA/FA enhanced Th(IV) adsorption at low pH and reduced Th(IV) adsorption at high pH. The adsorption of Th(IV) decreased with increasing temperature, indicating that the adsorption process of Th(IV) onto Al-pillared rectorite was exothermic. The experimental data of Th(IV) adsorption were analyzed with the Freundlich and Langmuir models, showing that the Freundlich model fitted the adsorption data better than the Langmuir model. The adsorption of Th(IV) on Al-pillared rectorite may be dominated by surface complexation and cation exchange also contributed partly to Th(IV) adsorption. (C) 2007 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Batch, Capillary Method, Carbon Nanotubes, Cation, Cation Exchange, Chelating Resin, Compacted Bentonite, Complexation, Concentration, Data, Desorption, Exothermic, Experimental, Fluorescence Spectroscopy, Freundlich, Freundlich Model, Fulvic Acid, Function, Humic Acid, Ionic Strength, Kinetic Dissociation, Langmuir, Langmuir Model, Model, Models, MX-80 Bentonite, pH, Rectorite, Red Mud, Rights, Soil, Soil Ha, Fa, Sorption, Strength, Surface, Surface Complexation, Temperature, Th, Th(IV)

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Full Text: [2008\App Cla Sci38, 279.pdf](2008/App%20Cla%20Sci38,%20279.pdf)

Abstract: in this study, the adsorption kinetics of 3-hydroxybenzaldehyde dissolved in ethanol on native and activated (acid/heat activation) bentonites were examined. The specific surface areas, pore size and pore-size distributions of the samples were fully characterized. The cation exchange capacities (CEC) of the native and activated bentonites were found as 65 and 97 meq/100 g, respectively. The adsorption efficiency of 3-hydroxybenzaldehyde onto the native and activated bentonites was increased with increasing initial bentonite amount and temperature. Also, it was found that the adsorption efficiency with activated bentonite was greater than native bentonite. The kinetics of adsorption of 3-hydroxybenzaldehyde was discussed using three kinetic models, the pseudo-first-order, the pseudo-second-order and the intra-particle diffusion model. The experimental data fitted very well the pseudo-second-order kinetic model and also followed the intra-particle diffusion model up to 20 min. The rate constants of pseudo-first-order, pseudo-second-order and intra-particle diffusion kinetics and the amount of the solute sorbed at equilibrium were determined. The initial sorption rate and the activation energy were also calculated. The activation energy of the sorption was calculated using the pseudo-second-order rate constant, and it was found to be 53.36 kJ mol-1 and 14.03 kJ mol-1 for native and activated bentonites, respectively. (C) 2007 Elsevier B.V. All rights reserved.

Keywords: 3-Hydroxybenzaldehyde, Activation, Activation Energy, Adsorption, Adsorption Kinetics, Aqueous-Solutions, Bentonite, Carbon, Cation Exchange, CEC, Diffusion, Dyes, Efficiency, Equilibrium, Exchange, Intra-Particle Diffusion, Intraparticle Diffusion, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Kinetics of Adsorption, Mechanism, Methylene-Blue, Model, Models, Montmorillonite, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Rate Constants, Rights, Samples, Simulation, Soils, Sorption, Surface, Temperature

? Mandal, S. and Mayadevi, S. (2008), Adsorption of fluoride ions by Zn-Al layered double hydroxides. *Applied Clay Science*, **40** (1-4), 54-62.

Full Text: [2008\App Cla Sci40, 54.pdf](2008/App%20Cla%20Sci40,%2054.pdf)

Abstract: Zn-Al layered double hydroxides (LDHs) with different molar ratios Zn/Al (0, 0.17, 0.34, 0.97, 3.47, proportional to) were prepared by the co-precipitation of chlorides, characterized and evaluated for their fluoride adsorption at room temperature from aqueous solutions. The fluoride adsorption of the as-synthesized LDHs was influenced by the chemical composition of the LDHs and ZA-11 (Zn/Al = 0.97) had the highest capacity for fluoride adsorption (1.14-4.16 mg/g). The adsorption increased after calcination of the LDH up to 500°C. The equilibrium data were fitted to the Freundlich, Langmuir, and Temkin equations. The kinetics of fluoride adsorption followed the pseudo-second order model. (C) 2007 Elsevier B.V All rights reserved.

Keywords: Activated Alumina, Adsorption, Anionic Clay, Aqueous Solutions, Aqueous-Solution, Calcination, Capacity, Carbon, Equilibrium, Fluoride, Freundlich, Hydrotalcites, Kinetics, Langmuir, Layered Double Hydroxide, Layered Double Hydroxides, Mg-Al, Model, Nanotubes, Phosphate, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second Order Model, Pseudo-Second-Order, Removal, Rights, Room Temperature, Temperature, Water

? Zhu, S.J., Hou, H.B. and Xue, Y.J. (2008), Kinetic and isothermal studies of lead ion adsorption onto bentonite. *Applied Clay Science*, **40** (1-4), 171-178.

Full Text: [2008\App Cla Sci40, 171.pdf](2008/App%20Cla%20Sci40,%20171.pdf)

Abstract: The use of bentonite for the removal of Pb(II) from aqueous solutions for different contact times, pH of suspension, and initial concentration of Pb and particle sizes of absorbent was investigated. Batch adsorption kinetic experiments revealed that the adsorption of Pb(II) onto bentonite involved fast and slow processes. The adsorption mechanisms in the lead/bentonite system followed pseudo-second-order kinetics with a significant contribution of film diffusion. The adsorption isotherms were described by means of the Langmuir and Freundlich isotherms and the Langmuir model represented the adsorption process better than the Freundlich model. The maximum adsorption capacity of Pb(II) onto natural bentonite was 78.82 mg g-1. (C) 2007 Elsevier B.V. All fights reserved.

Keywords: Absorbent, Adsorption, Adsorption Capacity, Adsorption Isotherms, Adsorption Kinetic, Aqueous Solutions, Aqueous-Solutions, Bentonite, Capacity, Diffusion, Equilibrium, Experiments, Freundlich, Freundlich Model, Heavy-Metals, Isothermal, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir and Freundlich Isotherms, Langmuir Model, Lead, Mechanisms, Metal Removal, Model, Palygorskite, Pb, Pb(II), pH, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Removal, Sorption, Waste-Water, Zeolite, Zinc

? Bhattacharyya, K.G. and Sen Gupta, S. (2008), Kaolinite and montmorillonite as adsorbents for Fe(III), Co(II) and Ni(II) in aqueous medium. *Applied Clay Science*, **41** (1-2), 1-9.

Full Text: [2008\App Cly Sci41, 1.pdf](2008/App%20Cly%20Sci41,%201.pdf)

Abstract: Kaolinite and montmorillonite have been used as adsorbents for Fe(III), Co(II) and Ni(II) in aqueous medium. The effect of different variables, namely, concentration of metal ions, amount of clay adsorbents, pH, time and temperature of interaction was investigated. Adsorption increased with pH till precipitation of insoluble hydroxides became dominant. The equilibrium time was 300, 240 and 180 min for Fe(III), Co(II) and Ni(II) respectively, the processes conforming to second order kinetics. Montmorillonite had a much higher adsorption capacity for the metal ions with the Langmuir monolayer capacity (q(m)) of 28.4 to 28.9 mg g(-1) compared to that of 10.4 to 11.2 mg g(-1) for kaolinite. All the interactions were exothermic except those between Co (II) and kaolinite. The adsorption processes were accompanied by an appreciable decrease in Gibbs energy. Both kaolinite and montmorillonite were observed to be suitable for treating water contaminated with Fe(III), Co(II) and Ni(II). (C) 2007 Elsevier B.V All rights reserved.

Keywords: Kaolinite, Montmorillonite, Fe(III), Co(II) and Ni(II), Sugar-Industry Waste, Bagasse Fly-Ash, Kinetic-Models, Heavy-Metal, Red Mud, Removal, Adsorption, Water, Copper, Sorption

? Lin, J.X., Zhan, S.L., Fang, M.H. and Yang, H. (2008), Comment on “Experimental study and modeling of basic dye sorption by diatomaceous clay”. *Applied Clay Science*, **41** (1-2), 105-106

Full Text: [2008\App Cla Sci41, 105.pdf](2008/App%20Cla%20Sci41,%20105.pdf)

Keywords: Adsorption, Kinetic Model, Pseudo-First-Order Equation, Pseudo-Second-Order Equation

? Anirudhan, T.S. and Suchithra, P.S. (2008), Synthesis and characterization of tannin-immobilized hydrotalcite as a potential adsorbent of heavy metal ions in effluent treatments. *Applied Clay Science*, **42** (1-2), 214-223.

Full Text: [2008\App Cla Sci42, 214.pdf](2008/App%20Cla%20Sci42,%20214.pdf)

Abstract: The modification of calcined hydrotalcite (HTC) by immobilizing tannin was investigated in the present work, in order to apply the modified media (TA-HTC) as an adsorbent in the removal of heavy metal ions (Cu(II), Zn(II) and U(II)) from industrial effluents. The adsorbent was characterized with FTIR, XRD, SEM, TG/DTG, surface area analyzer and potentiometric titrations. Batch experiments were performed as a function of process parameters such as agitation time, initial metal concentration, pH, ionic strength and adsorbent dose. The maximum adsorption was found at pH 6.0. The mechanism for the removal of metal ions by TA-HTC was based on ion exchange process. Experimental results showed that the adsorption of these metal ions was selective to be in the order of Cu(II)>Zn(II)>Cd(II). The process was very fast initially and maximum adsorption was observed with 3 h of agitation. The adsorption kinetics were investigated and kinetic parameters such as rate constant, external mass transfer diffusion and intraparticular mass transfer diffusion coefficients were evaluated. The adsorption process obeyed the intraparticular diffusion model. An increase of ionic strength of the medium caused a decrease in metal ion adsorption. Equilibrium isotherm data were analyzed by the Langmuir, Freundlich and Dubinin-Radushkevich equations using non-linear regression analysis. The best interpretation for the equilibrium data was given by the Langmuir isotherm and the maximum adsorption capacities were 81.47 mg g(-1) for Cu(II), 78.91 mg g(-1) for Zn(II) and 74.97 mg g(-1) for Cd(II). The adsorption efficiency towards heavy metal ion removal was tested using different industry wastewaters. The adsorption efficiency, regenerative and reuse capacities of this adsorbent were also assessed for four consecutive adsorption/desorption cycles and were found to retain the adsorption capacity. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Kinetics, Analysis, Aqueous-Solution, Batch, Calcined, Calcined Hydrotalcite, Capacity, Cd(II), Characterization, Cu(II), Desorption, Diffusion, Equilibrium, Equilibrium Isotherm, Freundlich, Ftir, Heavy Metal, Heavy Metal Ions, Hydrotalcite, Industry, Interlayer Anion, Interpretation, Intraparticular Diffusion, Ion Exchange, Ion-Exchange, Ionic Strength, Ions, Isotherm, Kinetic, Kinetic Parameters, Kinetics, Langmuir, Langmuir Isotherm, Layered Double Hydroxides, Mass Transfer, Mechanism, Metal, Metal Ion, Metal Ions, Model, Modification, Modified, Non-Linear, Non-Linear Regression, pH, Process Parameters, Rate Constant, Regression Analysis, Removal, Reuse, SEM, Strength, Synthesis, Tannin, Waste-Water, Wastewater, XRD, Zn(II)

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Full Text: [2009\App Cly Sci42, 497.pdf](2009/App%20Cly%20Sci42,%20497.pdf)

Abstract: The technical requirements for the landfill of municipal wastes in the European Union (EU) are given in the Council Directive 1999/31/EC. A geological barrier of at least I m thickness with a hydraulic conductivity (HQ of 1.10(-9) m/s is required. Where the geological barrier does not naturally meet the above conditions, a geological barrier of at least 0.5 m thick must be artificially established. We studied at controlled conditions, the ability of some clays (kaolinite or illite based) to act as landfill barriers. Several Spanish ceramic clays were compacted in columns (0.5 m length) and characterized for mineralogical, physical-chemical and heavy metal ions adsorption properties after 10 months leaching experiments. Zn, Cd, Pb and Cr salts were dosed in the synthetic leachates in order to test their in-depth retention. The specific surface area decreased in the material located near the clay-leachate interface region (<6 cm) due to biofilm formation around clay particles, but bulk mineralogical properties were not affected. Although all the clays fulfilled the HC requirements, the diffusion of anions (chloride) reached more than 30 cm in kaolinite-illite or pure illite clays. The presence of significant traces of smectite (<5%) was critical in anion transport retardation. Heavy metal ions were generally retained in the first 10 cm but in high surface-area illitic clays, the anions and heavy metal ions transport was stopped at <6 cm. The clay mineralogy and the presence of carbonates and soluble salts greatly influenced the behavior of the barrier materials. Carbonate dissolution and precipitation affected <6 cm depth. Divalent cations of carbonates selectively occupied the exchangeable positions and inhibited the retention of Na+, NH4+ and K+, in the leachates. Sulphate was reduced at a depth of 20-30 cm. This biogeochemical process contributed to cadmium retention, presumably precipitated as sulphide. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Ceramic Clays, Illite, Kaolinite, Carbonates, Anion Diffusion, Heavy Metal Ions, Biogeochemical Processes, Room-Temperature, Transport, Leachate, Dissolution, Rocks, Spain

? Anirudhan, T.S., Suchithra, P.S. and Radhakrishnan, P.G. (2009), Synthesis and characterization of humic acid immobilized-polymer/bentonite composites and their ability to adsorb basic dyes from aqueous solutions. *Applied Clay Science*, **43** (3-4), 336-342.

Full Text: [2009\App Cly Sci43, 336.pdf](2009/App%20Cly%20Sci43,%20336.pdf)

Abstract: A new polyacrylamide-bentonite composite with amine functionality (Am-PAA-B) was prepared by direct polymerization in the presence of N,N’-methylenebisacrylamide as a crosslinking agent and potassium peroxydisulphate as an initiator followed by reaction with ethylenediammine. The Am-PAA-B was modified by immobilizing humic acid and tested as an adsorbent to remove basic dyes (Malachite Green, Methylene Blue and Crystal Violet) from aqueous solutions. XRD, conductometric and potentiometric titrations were used to characterize the adsorbent. The adsorbent behaved like a cation exchanger and more than 99.0% removal of dyes was observed at the pH range 5.0 to 8.0. The adsorption kinetic data were interpreted by pseudo-second-order rate equation and the film diffusion was the rate-limiting step. The equilibrium data were fitted well with the Freundlich isotherm model. Desorption of dyes was achieved by treatment with 0.1 M HNO3 and four adsorption desorption cycles were performed without significant decrease in adsorption capacity. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Behavior, Clay, Dye Adsorption, Equilibrium, Humic Acid, Isotherm, Malachite-Green, Methylene-Blue, Polyacrylamide-Bentonite, Polymer, Clay Composite, Regeneration, Removal, Waste

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Full Text: [2009\App Cly Sci43, 465.pdf](2009/App%20Cly%20Sci43,%20465.pdf)

Abstract: This study investigated the potential use of kaolin as alternative adsorbents for removal of congo red from wastewater. The effect of adsorbent dosage, dye concentration, pH and temperature were experimentally studied to evaluate the adsorption capacity, kinetics and equilibrium. Experimental results revealed that optimal adsorption took place at acidic pH and high dye concentration. Ceram kaolin had the highest removal efficiency among studied kaolins, followed by K15GR and Q38. The dye uptake process obeyed the pseudo-second order kinetic expression and was best described by the Langmuir isotherm. Intra-particle diffusion studies showed that the adsorption mechanism was not exclusively controlled by the diffusion step and was more likely to be governed by external mass transfer. Thermodynamic studies showed congo red adsorption on all kaolins was exothermic and spontaneous in nature. Recovered Q38 and K15GR kaolin demonstrated an enhanced adsorption capability. The results indicate that these local kaolins could be employed as low-cost alternatives for removal of anionic dyes from industrial wastewater. Crown Copyright (C) 2008 Published by Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Anionic Dye, Aqueous-Solution, Basic Dye, Congo Red, Dye Removal, Equilibrium, Fly-Ash, Intraparticle Diffusion, Kaolin, Kinetic, Kinetics, Process Design, Sorption

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Full Text: [2009\App Cly Sci43, 503.pdf](2009/App%20Cly%20Sci43,%20503.pdf)

Abstract: The potential of activated bentonite was assessed for adsorption of chlorobenzene from aqueous solution. The bentonite used was treated by chemical and thermal activation over 100-500°C. The thermal activation increased the adsorption capacity more strongly than chemical activation which consists to acid and hydrogen peroxide treatment. The removal is dominated by adsorption at low initial concentrations and low temperatures and favourable in acidic media. The dependence of the adsorption on pH appears to be related to the solubility of chlorobenzene. Thermodynamic parameters such as ΔH°, ΔS°, ΔG° and Ea have been calculated. The adsorption process is spontaneous and exothermic in nature. The Freundlich isotherm described the adsorption data over the concentration range (20-270°C). Crown Copyright (C) 2008 Published by Elsevier B.V. All rights reserved.

Keywords: Adsorbent, Adsorption, Chlorobenzene, Montmorillonite, Phenol, Sorption, Thermal Activation

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Full Text: [2009\App Cla Sci44, 21.pdf](2009/App%20Cla%20Sci44,%2021.pdf)

Abstract: Bentonite and formaldehyde modified-bentonite (MF-bentonite) were tested for removal of the radioactive isotope Co-60. The two adsorbents were characterized (FTIR spectroscopy and scanning electron microscope) before and after modification. Some enhancement was obtained in the mesopore region due to impregnating the bentonite with 35% of formaldehyde solution and the modified sample had better adsorption performance. Furthermore, the adsorption capacity of MF-bentonite increased by increasing the quantity of formaldehyde deposited on the surface. The adsorption potential of bentonite and MF-bentonite for the removal of Co-60 radionuclide from radioactive waste solutions has been investigated. The influence of pH, contact time, adsorbent dosages and temperature is reported. Pseudo first-order and pseudo second-order kinetic models were used to analyze the adsorption rate data. The pseudo second-order model was found to best correlate the kinetic data. Adsorption isotherms were determined to assess the maximum adsorption capacity of bentonite and MF-bentonite. The Langmuir model fitted the data reasonably well in terms of regression coefficients. Adsorption studies were also performed at different temperatures to obtain the thermodynamic parameters. The numerical value of Delta G(0) decreased with an increase in temperature, indicating that the adsorption is more favorable at higher temperature. The positive values of Delta H-0 corresponded to the endothermic nature of adsorption processes. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Batch, Bentonite, Cs+, Heavy-Metals, Ions, Radioactive Cobalt, Removal, Removal, Sorption, Water, Zeolite-A

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Full Text: [2009\App Cla Sci45, 111.pdf](2009/App%20Cla%20Sci45,%20111.pdf)

Abstract: Palygorskite was characterized by XRD, FTIR and acid-base titration. The fitting of surface charge density using FITEQL resulted in an excellent fitting of experimental data and following intrinsic equilibrium constants: log K-XH = 2.08, log KAL-OH2+int = 5.46, and log KAl-O-int = -8.58. The total density of =Al-OH and =XNa were 9.76 x 10-5 mol/g and 1.36 x 10-4 mol/g, respectively. The adsorption of Pb(II) from aqueous solution on palygorskite was studied as a function of pH, ionic strength and temperature. Adsorption of Pb(H) on palygorskite was strongly dependent on pH, and weakly dependent on ionic strength. Two different adsorption mechanisms were proposed: (1) exchange reaction with little or no dependence on pH (i.e., =X2Pb0) at low pH; and (2) strong pH-dependent surface complexation reactions (=Al-OPb+) at neutral or alkaline conditions. The adsorption and desorption isotherms indicated that Pb(II) adsorption to palygorskite was reversible. The adsorption isotherms were simulated well by the Langmuir model. XPS analysis also indicated the adsorption species of Pb(II) to be =X2Pb0 at low pH and predominantly =Al-OPb+ at higher pH. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Isotherms, Adsorption Mechanisms, Analysis, Aqueous Solution, Attapulgite, Carbon Nanotubes, Charge, Complexation, Data, Desorption, Equilibrium, Experimental, FTIR, Fulvic-Acid, Function, Humic-Acid, Humic, Fulvic Acid, Ionic Strength, Isotherms, Langmuir, Langmuir Model, Lead, Maya-Blue, Mechanisms, Model, MX-80 Bentonite, Palygorskite, Pb(II), pH, pH-Dependent, Retention, Rights, Solution, Sorption-Desorption, Species, Strength, Surface, Surface Charge, Surface Complexation, Temperature, XPS, XRD

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Full Text: [2009\App Cla Sci45, 280.pdf](2009/App%20Cla%20Sci45,%20280.pdf)

Abstract: The performance of poly(epicholorohydrin dimethylamine) modified bentonite (EPIDMA/bentonite) as an adsorbent to remove anionic dyes, namely Direct Fast Scarlet, Eosin Y and Reactive Violet K-3R, was investigated in single, binary and ternary dye systems. In adsorption experiments in single dye solutions, the adsorption of the three dyes onto EPIDMA/bentonite was described by the Langmuir isotherm model and the pseudo-second-order kinetic model. At low dosage of EPIDMA/bentonite, preferential adsorption was observed for the dye with higher affinity to the adsorbent in mixed dye systems. The reduction in uptake of the dye with increasing equilibrium dye concentration in the isotherm and desorption in the kinetic curves were observed for the dye with lower affinity. The total amount of dyes adsorbed versus the total equilibrium dye concentrations were fitted well by the Langmuir isotherm model. The kinetics of the total adsorbed amount of dyes followed the pseudo-second-order kinetic model. The effect of the dosage of adsorbent on color removal efficiency, residual color distribution and adsorption kinetics was investigated. (C) 2009 Published by Elsevier B.V.

Keywords: Activated Bentonite, Adsorbent, Adsorption, Adsorption Kinetics, Anionic Dyes, Aqueous-Solutions, Basic-Dyes, Bentonite, Cationic-Polymer, Bentonite, Color Removal, Competitive Adsorption, Concentration, Desorption, Disperse Dyes, Distribution, Dye, Dyes, Efficiency, Equilibrium, Experiments, Humic-Acid, Isotherm, Isotherm Model, Kinetic, Kinetic Model, Kinetics, Kinetics, Dye Mixture, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Model, Modified, Na-Bentonite, Organo-Bentonite, Performance, Preferential Adsorption, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Reactive Dyes, Reduction, Removal, Removal Efficiency, Rhodamine-B, Solutions, Systems, Uptake, Waste-Water

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Full Text: [2009\App Cla Sci46, 216.pdf](2009/App%20Cla%20Sci46,%20216.pdf)

Abstract: Kaolinite and montmorillonite were modified with tetrabutylammonium (TBA) bromide, followed by calcination. The structural changes were monitored with XRD, FTIR, surface area and cation exchange capacity measurements. The modified clay minerals were used for adsorption of Fe(III), Co(II) and Ni(II) ions from aqueous solution under different conditions of pH, time and temperature. The uptake of the metal ions took place by a second order kinetics. The modified montmorillonite had a higher adsorption capacity than the corresponding kaolinite. The Langmuir monolayer capacities for the modified kaolinite and montmorillonite were Fe(III): 93 mg g-1 and 22.6 mg g-1: Co(II): 9.0 mg g-1 and 22 3 mg g-1; and Ni(II): 8.4 mg g-1 and 19.7 mg g-1. The modified kaolinite interacted with Co(II) in an endothermic manner. but all the other interactions were exothermic. The decrease of the Gibbs energy in all the cases indicated spontaneous adsorption. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorbents, Adsorption, Adsorption Capacity, Aqueous Solution, Aqueous-Solutions, Biosorption, Bromide, Cadmium, Calcination, Calcined, Capacity, Cation, Cation Exchange, Changes, Clay, Clay Minerals, Co(II), Co(II) And Ni(II), Copper, Endothermic, Energy, Exothermic, Fe(III), Fe(III),Co(II) And Ni(II), FTIR, Heavy-Metal, Ions, Kaolinite, Kinetics, Langmuir, Metal, Metal Ions, Minerals, Modified, Modified Clay, Monolayer, Montmorillonite, Ni(II), Ni(II) Ions, pH, Removal, Rights, Second Order, Second Order Kinetics, Second-Order, Solution, Sorption, Spontaneous, Surface, Surface Area, Temperature, Uptake, Water, XRD

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Full Text: [2009\App Cla Sci46, 369.pdf](2009/App%20Cla%20Sci46,%20369.pdf)

Abstract: Phoslock (R), a lanthanum-modified bentonite, has been investigated for phosphate uptake from synthetic and real wastewaters in laboratory and field. In laboratory tests, equilibrium and kinetics were studied at various temperatures, ionic strength, and pHs. The investigation indicated that phosphate adsorption occurs through a chemisorption process. The activation energy of the adsorption process was calculated based on pseudo-second order rate constant. The maximum adsorption capacity of Phoslock was unaffected at pH 5-7, but decreased at higher pHs. The monovalent phosphate anion, H2PO4-, had the greatest affinity for the adsorbent surface. Furthermore, it was also shown that the activation energy was lower at a higher solution pH attributed to the loss of adsorption sites at the higher pHs while it remained unaffected by the ionic strength of the solution. A field test also demonstrated that the Phoslock works well for phosphate uptake in polluted waters. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Activation, Activation Energy, Adsorbent, Adsorption, Adsorption Capacity, Adsorptive Removal, Bentonite, Capacity, Chemisorption, Chemisorption, Energy, Equilibrium, Field, Hydroxides, Investigation, Ionic Strength, Kinetics, Lanthanum, Metal(II) Chlorides, Modified Bentonite, Non-Aqueous Solutions, pH, Phosphate, Phosphate Adsorption, Phosphate Removal, Phosphorus, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Rate Constant, Red Mud, Removal, Rights, Silica-Gel, Solubility, Solution, Strength, Surface, Uptake, Waste-Water, Wastewaters, Waters

? Shahwan, T., Üzüm, Ç., Eroğlu, A.E. and Lieberwirth, I. (2010), Synthesis and characterization of bentonite/iron nanoparticles and their application as adsorbent of cobalt ions. *Applied Clay Science*, **47** (3-4), 257-262.

Full Text: [2010\App Cla Sci47, 257.pdf](2010/App%20Cla%20Sci47,%20257.pdf)

Abstract: This study reports the synthesis and characterization of iron nanoparticles in the presence of KID bentonite. Introducing K10 during synthesis of iron nanoparticles resulted in a partial decrease in the aggregation of the nanoparticles. The dispersed nanoparticles showed a typical core-shell structure and were predominantly within the 10-60 nm size range. The composite adsorbent was tested for the removal of Co2+ ions in aqueous solution at various contact times, concentrations, pH, and repetitive loadings. The rate of adsorption was evaluated using first and second order rate equations. The adsorption was described by the Freundlich model. The adsorbent showed effective removal after re-use and the adsorption increased with increasing initial pH. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorbent, Adsorption, Aggregation, Application, Aqueous Cu2+, Aqueous Solution, Bentonite, Characterization, Co2+, Co2+ Ions, Cobalt, Composite, Core Shell Structure, Core-Shell, Core-Shell Structure, First, Freundlich, Freundlich Model, Ions, Iron, Iron Nanoparticles, Loadings, Model, Nanoparticles, Particles, pH, Range, Remediation, Removal, Reuse, Rights, Second Order, Second-Order, Size, Solution, Structure, Synthesis, Zero-Valent Iron

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Full Text: [2010\App Cla Sci47, 317.pdf](2010/App%20Cla%20Sci47,%20317.pdf)

Abstract: Low-cost ceramic microfiltration membranes were prepared using clay of IIT Guwahati. Two membranes were prepared by paste casting followed by sintering at different temperatures, the first one from clay only (membrane A) and the second one from clay with small amounts of sodium carbonate, sodium metasilicate and boric acid (membrane B). Both the membranes were characterized by TGA, SEM, XRD, water permeability test and acid-base treatment. With the increase of sintering temperature, pore size as well as permeability and flexural strength were increasing while porosity and pore density were decreasing. The overall performance of membrane B was better than membrane A. The average pore size, porosity, pore density and flexural strength of membrane B sintered at 1000 degrees C were 4.58 mu m, 0.42, 2.06 x 10(10) m(-2) and 11.55 MPa respectively. This membrane was used for the removal of chromate from aqueous solutions by micellar enhanced microfiltration (MEMF) using cetylpyridinium chloride (CPC). 100% rejection of chromate ions were obtained at a feed ratio (CPC/chromate) of 10. Based on raw material prices, the membrane cost was estimated to be $19/m(2). The prepared low-cost membrane showed good promise for the treatment of wastewater containing such heavy metals. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Aqueous Solutions, Carbonate, Ceramic Membrane, Cetylpyridinium Chloride, Characterization, Chloride, Chromate, Chromate Removal, Clay, Clay, Cost, Effluents, Elaboration, Feed, Filtration, First, Flocculation, Heavy Metals, Ions, Low Cost, Membrane, Metals, Micellar Enhanced Microfiltration, Micellar-Enhanced Ultrafiltration, Microfiltration, Performance, Permeability, Porosity, Preparation, Rejection, Removal, Rights, Sem, Separation, Sintering, Size, Small, Sodium, Solutions, Strength, Temperature, TGA, Treatment, Wastewater, Water, XRD

? Khenifi, A., Derriche, Z., Mousty, C., Prévot, V. and Forano, C. (2010), Adsorption of Glyphosate and Glufosinate by Ni2AlNO3 layered double hydroxide. *Applied Clay Science*, **47** (3-4), 362-371.

Full Text: [2010\App Cla Sci47, 362.pdf](2010/App%20Cla%20Sci47,%20362.pdf)

Abstract: The removal of organophosphate and organophosphonate herbicides from aqueous solution by Ni2Al LDH material was investigated. Batch adsorption studies were conducted to evaluate the effect of various parameters such as contact time and initial herbicides concentrations. The adsorption kinetics was tested for Elovich, intraparticle diffusion, pseudo-second-order, and pseudo-first-order reactions and rate constants of kinetic models were calculated. The equilibrium adsorption data were analysed by Freundlich, Langmuir, and Tempkin using linear regression technique. Langmuir isotherms best fitted the data for adsorption equilibrium for both herbicides. Structural and textural analysis (XRD, MR, MEB) of Ni2AlNO3 LDH at different rates of adsorption evidence a mechanism of adsorption via an anion exchange reaction. Glyphosate and Glufosinate being adsorbed, in a 1rst step, at the surface of the cristallites and then intercalated in the interlayer domains. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Acid Dye, Adsorption, Adsorption Equilibrium, Adsorption Kinetics, Analysis, Aqueous Solution, Aqueous-Solutions, Batch Adsorption, Competitive Adsorption, Data, Diffusion, Double Hydroxide, Elovich, Equilibrium, Evidence, Freundlich, Glufosinate, Glyphosate, Herbicides, Hydrotalcite-Like Compounds, Intraparticle Diffusion, Isotherms, Kinetic, Kinetic Models, Kinetics, Langmuir, Langmuir Isotherms, Layered Double Hydroxide, LDH, Linear Regression, Mechanism, Mechanism of Adsorption, Models, MR, Phosphate, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Rate Constants, Rates, Reaction, Regression, Removal, Rights, Soils, Solution, Sorption, Surface, Time, Water, XRD

? Rawajfih, Z. and Nsour, N. (2010), Adsorption of γ-picoline onto acid-activated bentonite from aqueous solution. *Applied Clay Science*, **47** (3-4), 421-427.

Full Text: [2010\App Cla Sci47, 421.pdf](2010/App%20Cla%20Sci47,%20421.pdf)

Abstract: The adsorption of γ-picoline onto acid-activated bentonite was investigated. The adsorption reached a maximum at pH=7. Pseudo-first-order, pseudo-second-order, the Elovich equation, and intraparticle diffusion models were used to analyze the kinetic data obtained at different concentrations. The pseudo-second-order model was best applicable to describe the adsorption of gamma-picoline on acid-activated bentonite. The Langmuir model provided good correlation with the experimental data. The adsorption of gamma-picoline was endothermic with ΔHº = 29 J/mol. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Acid-Activated Bentonite, Adsorption, Agricultural Waste, Aqueous Solution, Bagasse Fly-Ash, Bentonite, Carbons, Chlorinated Phenols, Clay, Correlation, Data, Diffusion, Elovich, Elovich Equation, Endothermic, Experimental, Gamma-Picoline, Intraparticle Diffusion, Isosteric Heat, Isosteric Heat, Kinetic, Langmuir, Langmuir Model, Model, Models, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Pyridine-Derivatives, Removal, Rights, Sawdust, Solution, Sorption

? Wang, G.H., Wang, X.G., Chai, X.J., Liu, J.S. and Deng, N.S. (2010), Adsorption of uranium (VI) from aqueous solution on calcined and acid-activated kaolin. *Applied Clay Science*, **47** (3-4), 448-451.

Full Text: [2010\App Cla Sci47, 448.pdf](2010/App%20Cla%20Sci47,%20448.pdf)

Abstract: Kaolin was modified by calcination followed by acid-activation. This type of modification strongly increased the adsorption of uranium (VI) on kaolin. The equilibrium data agreed very well with the Langmuir model. Kinetic studies showed that the adsorption followed the pseudo-second-order model. Thermodynamic parameters showed the endothermic heat of adsorption and the feasibility of the process. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Acid Activation, Acid-Activation, Adsorption, Aqueous Solution, Cadmium Ions, Calcination, Calcined, Carbon, Clay, Data, Endothermic, Equilibrium, Feasibility, Heat of Adsorption, Kaolin, Kinetic, Kinetic Studies, Langmuir, Langmuir Model, Lead, Model, Modification, Modified, Montmorillonite, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Removal, Rights, Solution, Sorption, Thermodynamic, Thermodynamic Parameters, U(VI), Uranium, Uranium (VI), VI

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Full Text: [2010\App Cla Sci47, 452.pdf](2010/App%20Cla%20Sci47,%20452.pdf)

Abstract: Partial substitution of the interlayer cations of a local bentonite (Bogovina) by hexadecyl trimethylammonium ions (HDTMA) was performed to prepare adsorbents able to simultaneously adsorb toxic metal cations and organic pollutants. Acid Orange 10 adsorption increased with increasing HDTMA addition, while the adsorption of Pb2+ decreased with increasing organophilicity. The adsorption of the dye and Pb2+ and their mixture onto Na-rich bentonite and HDTMA-bentonites, regardless of adsorbents’ organophilicity, obeyed the pseudo-second-order kinetics model. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: 2 Organobentonites, Acid Orange 10, Adsorbents, Adsorption, Bentonite, Cation Exchange, Cations, Clay, Contaminants, Dye, Heavy-Metals, Ions, Kinetics, Kinetics Model, Lead, Lead Ion, Local, Metal, Model, Organic, Organic Pollutants, Organo-Bentonite, Pb2+, Phenol, Pollutants, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Rights, Smectite, Substitution, Tetrachloromethane Sorption, Toxic, Waste-Water

? Gunawan, N.S., Indraswati, N., Ju, Y.H., Soetaredjo, F.E., Ayucitra, A. and Ismadji, S. (2010), Bentonites modified with anionic and cationic surfactants for bleaching of crude palm oil. *Applied Clay Science*, **47** (3-4), 462-464.

Full Text: [2010\App Cla Sci47, 462.pdf](2010/App%20Cla%20Sci47,%20462.pdf)

Abstract: Bentonite Pacitan was modified with cetyl trimethylammonium bromide (CTAB) and LAS for bleaching crude palm oil. The organo-bentonites were prepared by normal heating and microwave irradiation. The advantage of using microwave irradiation is time efficiency. The bentonites were characterized by FTIR and XRD analysis. LAS modified bentonite was more effective as bleaching agent than CTA-bentonite. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Activated Bentonite, Adsorption, Bentonite, Bleaching, Contaminants, Elsevier, FTIR, LAS, Organo-Bentonite, Organobentonite, Palm Oil, Phenols, Removal, Sorption, Water, XRD

? Koswojo, R., Utomo, R.P., Ju, Y.H., Ayucitra, A., Soetaredjo, F.E., Sunarso, J. and Ismadji, S. (2010), Acid Green 25 removal from wastewater by organo-bentonite from Pacitan. *Applied Clay Science*, **48** (1-2), 81-86.

Full Text: [2010\App Cla Sci48, 81.pdf](2010/App%20Cla%20Sci48,%2081.pdf)

Abstract: The capability of surfactant modified-bentonite for adsorption of dyestuff from aqueous solution was investigated. The so-called “organo-bentonite” was obtained by modifying the raw bentonite obtained from Pacitan, Indonesia using cetyl trimethylammonium bromide (CTAB) and later employed as adsorbent for Acid Green 25 removal. Isotherm and kinetic experiments were carried out on three different temperatures (30, 40 and 50ºC). Langmuir and Freundlich models were chosen for isotherm equilibria data correlation, of which the former showed better suitability. On kinetic data representation, pseudo-first and second order models were used, with the last model gave better correlation. (C) 2009 Elsevier By. All rights reserved.

Keywords: Activated Bentonite, Adsorbent, Adsorption, Aqueous Solution, Aqueous-Solutions, Bentonite, Bromide, Cationic Surfactant, Chitosan, Clay, Correlation, CTAB, Data, Dye Adsorption, Dyestuff, Equilibria, Experiments, Freundlich, Indonesia, Isotherm, Isotherms, Kinetic, Kinetics, Langmuir, Mar, Model, Models, Organo-Bentonite, Organobentonite, Pseudo-First and, Removal, Representation, Rights, Second Order, Second-Order, Si, Solution, Sorption, Surfactant, Wastewater

? Shirvani, M. and Nourbakhsh, F. (2010), Desferrioxamine-B adsorption to and iron dissolution from palygorskite and sepiolite. *Applied Clay Science*, **48** (3), 393-397.

Full Text: [2010\App Cla Sci48, 393.pdf](2010/App%20Cla%20Sci48,%20393.pdf)

Abstract: Dissolution weathering of minerals can be greatly affected by the presence of siderophores and their adsorption in soil environments. In this research, adsorption equilibria and kinetics of desferrioxamine-B (DFO-B) siderophore on palygorskite and sepiolite, minerals of arid and semiarid soils, were investigated. Iron (Fe) release pattern in the presence of increasing concentrations of DFO-B was also studied. Palygorskite represented a higher capacity but lower affinity for DFO-B adsorption compared to sepiolite. Retention of DFO-B by the minerals was initially rapid and then slowed down as time progressed. Time-dependent DFO-B adsorption to palygorskite and sepiolite was best described by the pseudo second-order and parabolic diffusion models, respectively. The presence of DFO-B enhanced the amount of Fe released from the clay minerals suggesting that siderophore-promoted dissolution might be one of the weathering mechanisms acting on these fibrous clay minerals. Iron concentrations measured in the equilibrium solutions with palygorskite and sepiolite were in the adequate Fe nutrition range for microorganisms and plant roots in soil environments. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Bacterium, Capacity, Clay, Clay Minerals, Clay-Minerals, Dfob, Diffusion, Dissolution, Equilibria, Equilibrium, Fe, Fibrous Clays, Goethite, Hydroxamate Siderophores, Iron, Isotherm, Kaolinite, Kinetic, Kinetics, Mechanisms, Microorganisms, Minerals, Models, Nutrition, Palygorskite, Pattern, Plant, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Release, Research, Rights, Second Order, Second-Order, Sepiolite, Siderophore, Siderophore-Promoted Dissolution, Soil, Soil Minerals, Soils, Solutions, Sorption, Weathering

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Full Text: [2010\App Cla Sci48, 485.pdf](2010/App%20Cla%20Sci48,%20485.pdf)

Abstract: Lithium/aluminum layered double hydroxide intercalated by chloride (Li/AI LDH-CI) was considered as a superior adsorbent for anionic compounds. This study aimed to establish the adsorption behavior of arsenate on Li/AI LDH-Cl by employing X-ray absorption spectroscopy (XAS) and adsorption kinetics. The XAS analysis demonstrated that inner-sphere complexes were the dominant arsenate adsorption configurations on the planar surfaces and edges of Li/AI LDH-Cl. Based on a kinetic study, arsenate adsorption on Li/AI LDH-CI could be separated into fast and slow reactions. This biphasic arsenate adsorption behavior was partially attributable to: (i) two different adsorption sites associated with Li, exposing on planar surfaces, and Al, existing on the edges of double hydroxyl layers, and (II) micropore adsorption sites within the Li/AI LDH-CI surfaces. Activation energies derived by the Arrhenius equation indicated that the diffusion process was the rate-limiting step of arsenate adsorption on Li/AI LDH-Cl. (C) 2010 Elsevier B.rate-limiting step of arsenate adsorption on Li/AI LDH-Cl. 2010 Elsevier B.V. All rights reserved. All rights reserved.

Keywords: Arsenate Adsorption Kinetics, X-Ray Absorption Spectroscopy, Diffusion, Oxide-Water Interface, Anion-Exchange, X-Ray, Surface-Chemistry, Iron-Oxides, Kinetics, Phosphate, Gibbsite, Removal, Intercalation

? Wu, X.W., Ma, H.W. and Zhang, Y.R. (2010), Adsorption of chromium(VI) from aqueous solution by a mesoporous aluminosilicate synthesized from microcline. *Applied Clay Science*, **48** (3), 538-541.

Full Text: [2010\App Cla Sci48, 538.pdf](2010/App%20Cla%20Sci48,%20538.pdf)

Abstract: A mesoporous aluminosilicate was hydrothermally prepared from microcline in an alkaline condition with cetyltrimethylammonium bromide as synthesis directing agent The properties of the sample were determined by X-ray powder diffraction, nitrogen adsorption, and transmission electron microscope. The sample was employed for removal of Cr(VI) ions from aqueous solution. The effect of adsorption time, pH value of the medium and initial concentration of Cr(VI) on adsorption was studied. The adsorption was modeled by Dubinin Radushkevich adsorption theory. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Chromium(VI), Cr(VI), Mesoporous Aluminosilicate, Removal, Silica, Synthesis

? Viswanathan, N. and Meenakshi, S. (2010), Selective fluoride adsorption by a hydrotalcite/chitosan composite. *Applied Clay Science*, **48** (4), 607-611.

Full Text: [2010\App Cla Sci48, 607.pdf](2010/App%20Cla%20Sci48,%20607.pdf)

Abstract: Hydrotalcite (HT) possesses an appreciable defluoridation capacity (DC). In order to enhance its DC and to make it into a usable form, a HT/chitosan (HTCs) composite was prepared which showed a DC of 1255 mg F-/kg compared to 1030 and 52 mg F-/kg for HT and chitosan respectively. Batch adsorption studies were carried out to evaluate the influence of contact time, pH, co-anions, initial fluoride concentration and temperature. The composite was characterized using FTIR, XRD and SEM with EDAX analysis. The equilibrium adsorption data was fitted with the Langmuir model. The reaction-based and diffusion-based models were used to identify the kinetics of the reaction. The suitability of the composite was tested at field conditions. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Analysis, Aqueous-Solutions, Batch Adsorption, Capacity, Chitosan, Chromium(VI) Removal, Composite, Concentration, Data, DC, Defluoridation, Dialysis, EDAX, Equilibrium, Field, Fluoride, Fluoride Adsorption, Fluoride Removal, FTIR, Hydrotalcite, Hydroxide, Ion-Exchange, Kinetics, Langmuir, Langmuir Model, Mg-Al-Co3 Hydrotalcite, Model, Models, pH, Resin, Rights, Sem, Sorption, Temperature, Water, XRD

? Xue, A.L., Zhou, S.Y., Zhao, Y.J., Lu, X.P. and Han, P.F. (2010), Adsorption of reactive dyes from aqueous solution by silylated palygorskite. *Applied Clay Science*, **48** (4), 638-640.

Full Text: [2010\App Cla Sci48, 638.pdf](2010/App%20Cla%20Sci48,%20638.pdf)

Abstract: Surface modification of palygorskite is one of the important ways to enlarge its application field. This study adopts palygorskite modified by 3-aminopropyl triethoxysilane (APTES) as adsorbent of three reactive dyes. The surface modification of palygorskite was characterized by Fourier transform infrared spectroscopy and X-ray diffraction. Batch studies were carried out to investigate various experimental parameters such as adsorbent dosage, contact time, initial dye concentration and initial pH. The kinetics of the adsorption followed the pseudo-second-order model. Adsorption equilibrium data were fitted by the Langmuir isotherm. The adsorption of the three dyes by palygorskite was low but was strongly increased by the silylated palygorskite. The maximum adsorption capacity calculated by the Langmuir model was 34, 38, 60 mg/g for Reactive Red 3BS, Reactive Blue KE-R and Reactive Black GR, respectively. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorbent, Adsorbent Dosage, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Application, APTES, Aqueous Solution, Capacity, Clay, Concentration, Data, Dye, Dyes, Equilibrium, Experimental, Field, Infrared Spectroscopy, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Model, MCM-41, Model, Modification, Modified, Palygorskite, pH, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Reactive Dyes, Removal, Rights, Silylation, Solution, Sorption, Spectroscopy, Surface, Surface Modification, X-Ray, X-Ray Diffraction

? Chen, Y.M., Zhou, A.N., Liu, B. and Liang, J. (2010), Tramadol hydrochloride/montmorillonite composite: Preparation and controlled drug release. *Applied Clay Science*, **49** (3), 108-112.

Full Text: [2010\App Cla Sci49, 108.pdf](2010/App%20Cla%20Sci49,%20108.pdf)

Abstract: The adsorption of tramadol hydrochloride (TH) by montmorillonite (MMT) was investigated, to obtain a controlled drug release system. The adsorption isotherm was fitted by the Langmuir model and followed the pseudo-second-order kinetics. The composite was characterized by XRD, FTIR and TG-DTA. TH was intercalated into MMT in vertical orientation giving a basal spacing of 1.99 nm. Release of the intercalated TH was studied in simulated gastric fluid (SIF, pH =1.2) and simulated intestinal fluid (SIF, pH= 7.4) at 37ºC. Controlled release of TH from TH/MMT was observed. Crown Copyright (C) 2010 Published by Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Isotherm, Clays, Composite, Controlled Drug Release, Drug, Drug Release, FTIR, In-Vitro Release, Intercalation, Intercalation Compounds, Isotherm, Kinetics, Langmuir, Langmuir Model, Model, Montmorillonite, pH, Preparation, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Release, Rights, System, Tramadol, Tramadol Hydrochloride, Vertical, XRD

? Ganigar, R., Rytwo, G., Gonen, Y., Radian, A. and Mishael, Y.G. (2010), Polymer-clay nanocomposites for the removal of trichlorophenol and trinitrophenol from water. *Applied Clay Science*, **49** (3), 311-316.

Full Text: [2010\App Cla Sci49, 311.pdf](2010/App%20Cla%20Sci49,%20311.pdf)

Abstract: Phenolic compounds pose health and environmental hazards. This study focused on two priority pollutants, trinitrophenol (picric acid-PA) and trichlorophenol (TCP), which were detected in rivers, lakes and water reservoirs. Polycation-clay mineral nanocomposites were characterized and designed for the removal of these pollutants from water. The adsorption kinetics of polydiallyl dimethylammonium chloride (PDADMAC) and poly-4-vinylpyridine-co-styrene (PVPcoS) on montmorillonite (MMT) was significantly faster (2-4 h) than on sepiolite (3-4 days), which was explained by the latter’s porous structure. Consequently, polycation-MMT composites were chosen to test pollutant adsorption. Both PA (anionic) and TCP (nonionic) showed higher affinity to the less charged polycation PVPcoS (40% of the monomers charged) than to the highly charged polycation PDADMAC. However, PA removal by the PVPcoS-MMT composite was nearly complete whereas TCP removal reached 40 to 60% of the added amounts. The adsorption isotherms of the pollutants suggested that the binding to PVPcoS-MMT was driven mainly by hydrophobic interactions, but also by electrostatic interactions in the case of PA. Differences were also seen in the binding kinetics of PA and TCP to dried and wet composites. The hydration properties of PA enhanced its binding to wet composites whereas the hydrophobic properties of TCP enhanced its binding to dehydrated composites. The results of this study emphasize the importance of better understanding pollutant-adsorbent interactions to enable more efficient tailoring of polymer-clay mineral composites for water treatment. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: 2,4,5-Trichlorophenol (TCP), 2,4,6-Trinitrophenol (PA), Adsorbents, Adsorption, Adsorption Isotherms, Adsorption Kinetics, Binding, Cationic Polyelectrolytes, Charge-Density, Chloride, Composite, Composites, Environmental, Health, Hydration, Hydrophobic, Isotherms, Kinetics, Lakes, Montmorillonite, Montmorillonite, Nanocomposite, Nanocomposites, Organo-Clays, Phenolic Compounds, Phenolic-Compounds, Pollutants, Polycation, Polycations, Removal, Reservoirs, Rights, Rivers, Sepiolite, Silica, Sorption, Structure, TCP, Treatment, Understanding, Water, Water Treatment

? Salvestrini, S., Sagliano, P., Iovino, P., Capasso, S. and Colella, C. (2010), Atrazine adsorption by acid-activated zeolite-rich tuffs. *Applied Clay Science*, **49** (3), 330-335.

Full Text: [2010\App Cla Sci49, 330.pdf](2010/App%20Cla%20Sci49,%20330.pdf)

Abstract: Two different acid-activated zeolite-rich tuffs were evaluated as potential adsorbents for atrazine removal from water. The materials investigated were: Neapolitan yellow tuff (NYT, containing 37% phillipsite and 17% chabazite) and a clinoptilolitic tuff from Eskisehir (Turkey) (T-CPL, 79% clinoptilolite). The T-CPL tuff exhibited the highest adsorption capacity. Atrazine adsorption, estimated by batch method, was likely to involve electrostatic interactions obeying a pseudo-second-order kinetic model, whereas hydrogen bonds did not appear to play a significant role. Pre-treatment of tuffs with increasing concentrations of HCl resulted in a sharp increase of atrazine adsorption capacity, followed by a progressive reduction for both types of tuff. The effects of acidification on zeolites were investigated by spectrophotometric measurement of dealumination and by FT-IR and XRD analysis. The results suggested that acid activation of zeolites enhanced their ability to bind atrazine, which accounts for the initial increase of the adsorption. Acid activation, however, attacked the zeolite structure, particularly of zeolites rich in aluminium or poor in silicon, e.g., phillipsite and chabazite. The alteration of the zeolite structure by acid could account for the decrease of atrazine adsorption observed with both tuff types and for the absolute low adsorption of NYT relative to T-CPL. The results of this exploratory investigation thus, indicate that acid-activated clinoptilolitic tuff could be considered a suitable material for removing atrazine and similar chemical compounds from water. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Acid Activation, Acid-Activated Zeolites, Acid-Activation, Acidification, Activation, Adsorbents, Adsorption, Adsorption Capacity, Aluminium, Analysis, Atrazine, Batch, Batch Method, Capacity, Carbon, Chabazite, Chemical, Clinoptilolite, FT-IR, FTIR, Hydrogen, Investigation, Ion-Exchange, Kinetic, Kinetic Model, Measurement, Model, Montmorillonite, Phillipsite, Pollution, Potential, Pre-Treatment, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Reduction, Removal, Rights, Role, Selectivity, Silicon, Sorption, Stability, Structure, Turkey, Water, Water Treatment, XRD, Zeolite, Zeolites

? Tekin, N., Dinçer, A., Demirbaş, Ö. and Alkan, M. (2010), Adsorption of cationic polyacrylamide (C-PAM) on expanded perlite. *Applied Clay Science*, **50** (1), 125-129.

Full Text: [2010\App Cla Sci50, 125.pdf](2010/App%20Cla%20Sci50,%20125.pdf)

Abstract: The adsorption of cationic polyacrylamide (C-PAM) onto expanded perlite (EP) from aqueous solutions was investigated as a function of some parameters such as pH, ionic strength, and temperature. The adsorption of C-PAM was increased with increasing pH and temperature and with decreasing ionic strength. The Langmuir isotherm model fitted the isotherm data better than the Freundlich model. The electrophorotic mobility of EP dispersions was measured in aqueous solutions of NaCl and at different C-PAM concentrations and pH. The thermodynamic parameters Gibbs free energy, enthalpy, and entropy were evaluated. The dimensionless separation factor (R-L) revealed that EP can be used for adsorption of C-PAM from aqueous solutions. The pseudo first-order kinetics equation best fitted the experimental data. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Aqueous Solutions, Behavior, Bentonite, Cationic Polyacrylamide, Data, Dispersions, Electrokinetic Properties, Electrophoretic Mobility, Energy, Enthalpy, Entropy, Expanded Perlite, Experimental, First Order, First-Order Kinetics, Flocculation, Freundlich, Freundlich Model, Function, Gibbs Free Energy, Ionic Strength, Isotherm, Isotherm Model, Kaolin Suspensions, Kinetics, Kinetics Equation, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Mobility, Model, NaCl, Perlite, pH, Polyacrylamide, Polymer, Pseudo First Order, Pseudo First-Order, Pseudo-First-Order, Rights, Separation, Sepiolite, Solutions, Sorption, Strength, Surfaces, Surfactants, Temperature, Thermodynamic, Thermodynamic Parameters

? Ho, Y.S. (2010), Comment on “Acid Green 25 removal from wastewater by organo-bentonite from Pacitan” by R. Koswojo, R. P. Utomo, Y.-H. Ju, A. Ayucitra, F. E. Soetaredjo, J. Sunarso, S. Ismadji [Applied Clay Science 48 (2010) 81-86]. *Applied Clay Science*, **50** (1), 164.

Full Text: [2010\App Cla Sci50, 164.pdf](2010/App%20Cla%20Sci50,%20164.pdf); [2010\App Cla Sci50, 164-1.pdf](2010/App%20Cla%20Sci50,%20164-1.pdf); [2010\App Cla Sci-Ho.pdf](2010/App%20Cla%20Sci-Ho.pdf); [2010\App Cla Sci-Ho1.pdf](2010/App%20Cla%20Sci-Ho1.pdf); [2010\App Cla Sci-Ho2.pdf](2010/App%20Cla%20Sci-Ho2.pdf)

Keywords: Adsorption, Clay, Comment on, Dye, Equilibrium, Heavy-Metals, Organo-Bentonite, Organobentonite, P, Removal, Wastewater

? Utomo, R.P., Koswojo, R., Ju, Y.H., Ayucitra, A., Soetaredjo, F.E., Sunarso, J. and Ismadji, S. (2010), Reply to the comment on “Acid Green 25 removal from wastewater by organo-bentonite from Pacitan” by R. Koswojo, R. P. Utomo, Y.-H. Ju, A. Ayucitra, F. E. Soetaredjo, J. Sunarso, S. Ismadji [Applied Clay Science 48 (2010) 81-86]. *Applied Clay Science*, **50** (1), 165-166.

Full Text: [2010\App Cla Sci50, 165.pdf](2010/App%20Cla%20Sci50,%20165.pdf)

Abstract: This letter is a response to the comment by Professor Ho on our recent article entitled “Acid Green 25 removal from wastewater by organo-bentonite from Pacitan” published in Applied Clay Science 48 (2010) 81–86. Professor Ho raised an issue about citation misleading for the pseudo-first and second order kinetic equations which are widely used to correlate kinetic adsorption data. This letter is intended to clarify the misunderstanding and present the correct citations.

Keywords: 2nd-Order Kinetic Expression, Adsorption, Aqueous-Solution, Biosorption, Citation, Citations, Clay, Copper(II) Adsorption, Data, Dr. Ho, Y.S., Equilibrium, Heavy-Metal Cd2+, Kinetic, Kinetic Adsorption, Kinetic Equations, Mucor-Hiemalis, Organo-Bentonite, Organobentonite, P, Pseudo-First and, Pseudo-First Order, Pseudo-Second Order, Remediation, Removal, Rights, Second Order, Second-Order, Sorption, Wastewater

? Wu, Q.F., Li, Z.H., Hong, H.L., Yin, K. and Tie, L.Y. (2010), Adsorption and intercalation of ciprofloxacin on montmorillonite. *Applied Clay Science*, **50** (2), 204-211.

Full Text: [2010\App Cla Sci50, 204.pdf](2010/App%20Cla%20Sci50,%20204.pdf)

Abstract: Fluoroquinolones are a group of antibiotics commonly used in human and veterinary medicine. Highly enriched in sewage sludge as well as animal manure they can enter the environment by surface application of the sludge and manure. In this study, the interaction and adsorptive removal of ciprofloxacin (CIP) with a sodium montmorillonite (MMT) were studied in batch tests and supplemented by XRD and FTIR analyses. The adsorption of GP on MMT was instantaneous with a large rate constant and a high initial rate. Quantitative desorption of exchangeable cations confirmed cation exchange as the most important mechanism of CIP adsorption on MMT. Higher CIP adsorption was achieved when solution pH was less than the pK(a2) value of CIP, above which adsorption coefficient decreased significantly. Fitting of experimental data to adsorption of different CIP species indicated that both cationic and zwitterion forms of CIP could adsorb on MMT. An increase in basal spacing after CIP uptake indicated interlayer adsorption, i.e. intercalation of CIP. The substantial adsorption of CIP when pH was greater than the pK(a2) together with the disappearance of C=O stretching vibration of the -COOH group in FTIR analyses suggested that complexation may be the dominant mechanism at high pH. (c) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Analyses, Animal Manure, Antibiotics, Application, Batch, Batch Tests, Cation, Cation Exchange, Ciprofloxacin, Clay-Minerals, Complexation, Complexes, Data, Desorption, Environment, Exchangeable Cations, Experimental, Fluoroquinolone Antibacterial Agents, Forms, FTIR, Goethite, Human, Interaction, Intercalation, Manure, Mechanism, Medicine, Montmorillonite, Ofloxacin, Oxytetracycline, pH, Rate Constant, Removal, Rights, Sewage, Sewage Sludge, Sludge, Sodium, Sodium Montmorillonite, Soil, Solution, Sorption, Species, Surface, Surfaces, Uptake, Value, Veterinary, Vibration, XRD

? Celik, H. (2010), Technological characterization and industrial application of two Turkish clays for the ceramic industry. *Applied Clay Science*, **50** (2), 245-254.

Full Text: [2010\App Cla Sci50, 245.pdf](2010/App%20Cla%20Sci50,%20245.pdf)

Abstract: This study focuses on the mineralogical, chemical, thermal and physical characterization of Afyon and Istanbul clays from Turkey and evaluation of the potential of the Afyon clay to manufacture traditional ceramic products with industrial processing. The suitability of the raw clay material from Afyon region to produce floor tiles was not tested yet. The effect of partial substitution of the clay from Istanbul-Sile deposit (one of the main clay producing areas of Turkey) by Afyon clay on ceramic properties was studied. The studied samples were kaolinite (Istanbul clay) and illite (Afyon clay) based materials. While there were no major differences in water absorption, the bending strength decreased slightly when the kaolinitic Istanbul clay was substituted by the illitic Afyon clay for floor tile production. Almost all technological properties of the Afyon clay deposit demonstrated the industrial suitability of Afyon clay as a potential ceramic raw material for the growing Turkish ceramic tile industry. (c) 2010 Elsevier B.V. All rights reserved.

Keywords: Clay Mineral, Chemical And Physical Properties, Industry, Ceramic, Mullite Reaction-Series, Firing Temperature, Kaolinite, Tunisia

? Pan, J.M., Zou, X.H., Yan, Y.S., Wang, X., Guan, W., Han, J.A. and Wu, X.Y. (2010), An ion-imprinted polymer based on palygorskite as a sacrificial support for selective removal of strontium(II). *Applied Clay Science*, **50** (2), 260-265.

Full Text: [2010\App Cla Sci50, 260.pdf](2010/App%20Cla%20Sci50,%20260.pdf)

Abstract: Surface ion-imprinting technique combined with a sacrificial-support process was established to synthesize Sr(II) ion imprinted polymer (S-IIP) palygorskite which acted as the sacrificial support. FT-IR, TEM, nitrogen gas adsorption and laser particle size measurements were employed for the characterization of S-IIP and non-imprinted polymer (NIP). Factors for the adsorption of Sr(II) ions were investigated. Under the optimum condition, adsorption and selective recognition of Sr(II) ions followed the order S-IIP>NIP. The adsorption equilibrium data were fitted by the Langmuir isotherm model and the monolayer adsorption capacity of SAP was 45.0 mg g-1 at 298 K. 53.5 mg g-1, at 308 K and 58.5 mg g-1 at 318 K. Adsorption was described by the pseudo-second-order kinetics, and the thermodynamic parameters also indicated that the adsorption process was spontaneous but endothermic. S-IIP was a promising adsorbent for the selective removal of traces of Sr(II) ions. It could be reused four times with only about 5% loss for adsorption and 17% loss for desorption. Crown Copyright (c) 2010 Published by Elsevier B.V. All rights reserved.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Capacity, Characterization, Data, Desorption, Endothermic, Equilibrium, FT-IR, FTIR, Ions, Isotherm, Isotherm Model, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Laser, Model, Monolayer, Nitrogen, Palygorskite, Particle Size, Polymer, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Recognition, Removal, Rights, Sacrificial-Support Material, Selective Recognition, Selective Removal, Separation, Size, Sorbent, Strontium(II), Support, Surface Ion-Imprinted, Surface Ion-Imprinting, TEM, Templates, Thermodynamic, Thermodynamic Parameters

? Jana, S., Purkait, M.K. and Mohanty, K. (2010), Removal of crystal violet by advanced oxidation and microfiltration. *Applied Clay Science*, **50** (3), 337-341.

Full Text: [2010\App Cla Sci50, 337.pdf](2010/App%20Cla%20Sci50,%20337.pdf)

Abstract: Advanced oxidation process (AOP) followed by microfiltration (MF) was proposed for the removal of crystal violet from aqueous solutions to save energy time and cost. Fenton’s reagent was used to degrade the dye The optimal composition of Fenton’s reagent for an initial dye concentration of 100 mg L(-1) was 1000 mg L(-1) H(2)O(2) and 100 mg L(-1) FeSO(4) 7H(2)O A microfiltration membrane (average pore size of 031 mu m) was used to remove the oxidation product at transmembrane pressures of 138 207 and 276 kPa Small changes in pH (6 4 to 6 2) total dissolved solid (360 mg L(-1) to 350 mg L(-1)) and density (999 7 kg m(-3) to 997 1 kg m(-3)) were observed during microfiltration No dye and dispersed particles were found in the permeate Thus 100% dye removal was achieved by the hybrid process (C) 2010 Elsevier B V All rights reserved.

Keywords: Adsorption, Advanced Oxidation, Aop Followed By Microfiltration, Aqueous Solutions, Aqueous-Solutions, Ceramic Membrane, Combination, Crystal Violet, Decolorization, Dye, Dye Removal, Dye, Salt Mixtures, Energy, Membrane-Hybrid Process, Nanofiltration Membranes, Oxidation, Ph, Reactive Dye Removal, Removal, Sludge, Technology, Waste-Water

? Tong, D.S., Zhou, C.H., Lu, Y., Yu, H.Y., Zhang, G.F. and Yu, W.H. (2010), Adsorption of Acid Red G dye on octadecyl trimethylammonium montmorillonite. *Applied Clay Science*, **50** (3), 427-431.

Full Text: [2010\App Cla Sci50, 427.pdf](2010/App%20Cla%20Sci50,%20427.pdf)

Abstract: The adsorption of Acid Red G(ARG C18H13N3Na2O8S2) onto octadecyl trimethylammonium montmorillonite was investigated in aqueous solution The amount of adsorption of ARC onto octadecyl trimethylammonium montmorillonite decreased with increasing pH The isotherms were fitted by the Langmuir model The pseudo-second-order kinetics model represented the experimental data better than the pseudo-first-order model The activation energy Gibbs free energy enthalpy and entropy of adsorption were also evaluated (C) 2010 Elsevier B V All rights reserved.

Keywords: Acid Dye, Activation, Activation Energy, Adsorption, Aqueous-Solutions, Bentonite, Cationic Surfactant, Data, Dye, Isotherms, Kinetics, Kinetics Model, Langmuir, Langmuir Model, Mechanisms, Model, Montmorillonite, Organobentonite, P-Nitrophenol, pH, Pseudo Second Order, Pseudo-Second-Order, Removal, Smectite Clays, Sorption, Waste Water, Water

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Full Text: [2011\App Cla Sci51, 94.pdf](2011/App%20Cla%20Sci51,%2094.pdf)

Abstract: Mesoporous molecular sieves were prepared with montmorillonite and kaolinite as silica sources, respectively, (denoted as P-M and P-K) by a hydrothermal method. The two prepared materials were characterized by XRD. FTIR and N-2 adsorption-desorption. The results indicated that both P-M and P-K are typical mesoporous molecular sieves with high specific surface areas. Sorption of Pb(II) from aqueous solution to P-M and P-K was studied by using a batch technique. The effect of contact time, pH and temperature on the sorption of Pb(II) to P-M and P-K was investigated. A simplified surface complexation model was used to simulate the complexation of Pb(II) ions onto molecular sieves. The results suggested that sorption of Pb(II) was strongly dependent on pH values. Kinetics of sorption showed that the pseudo-second-order kinetic model held for the sorption process. Equilibrium modeling showed that the sorption of Pb(II) was fitted well by the Langmuir isotherm model. The thermodynamic parameters (ΔH degrees, ΔS degrees, and ΔG degrees) were calculated from the sorption of Pb(II) at three different temperatures of 283 K, 303 K and 333 K. The sorption reaction was endothermic and the process was favored at high temperature. The results indicated that both P-M and P-K are suitable materials for removal of Pb( II) from large volumes of aqueous solutions. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption Behavior, Aqueous-Solution, Equilibrium, Foreign Ions, Ftir, Fulvic-Acid, Humic-Acid, Hydrothermal Synthesis, Ionic-Strength, Kaolinite, Kinetic Model, Kinetics, Langmuir, Langmuir Isotherm, Mesoporous Molecular Sieves, Mesoporous Silica, Montmorillonite, Multiwall Carbon Nanotubes, Mx-80 Bentonite, Pb(II), pH, Sorption, Thermodynamic

? Baybas, D. and Ulusoy, U. (2011), The use of polyacrylamide-aluminosilicate composites for thorium adsorption. *Applied Clay Science*, **51** (1-2), 138-146.

Full Text: [2011\App Cla Sci51, 138.pdf](2011/App%20Cla%20Sci51,%20138.pdf)

Abstract: The adsorption of Th4+ ions was studied on composites of polyacrylamide (PAAm) with montmorillonite (Mt), clinoptilolite (Z) and zeolite Y (ZY), and after phytic acid (Phy) modification. The monolayer adsorption capacity was 0.33 and 0.65 mol kg-1 for PAAm-Mt and PAAm-Mt-Phy, 0.07, 0.21 and 0.60 mol kg-1 for Z, PAAm-Z and PAAm-Z-Phy, and 0.74, 0.89 and 1.18 mol kg-1 for ZY, PAAm-ZY and PAAm-ZY-Phy. The enthalpy and entropy changes were positive for all adsorbents. The adsorption kinetics followed the pseudo-second order model indicating that the rate controlling step was chemical adsorption by ion exchange. The reusability tests for five uses proved that the PAAm-Mt and PAAm-Z were reusable and complete recovery of the adsorbed ions was possible. ZY and the composites modified with Phy were not reusable. The presence of foreign metal cations did not influence the Th4+ adsorption. The adsorbed Th4+ onto the columns was effectively recovered with diluted HNO3. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Aqueous-Solutions, Ion-Exchange, Kinetics, Metal-Ions, Montmorillonite, Phytic Acid, Phytic Acid, Removal, Solid-Phase Extraction, Sorption, Th(IV), Thorium, X-Zeolite, Y-Zeolite, Zeolite

? Hu, B.J., Luo, H.J., Chen, H. and Dong, T.T. (2011), Adsorption of chromate and para-nitrochlorobenzene on inorganic-organic montmorillonite. *Applied Clay Science*, **51** (1-2), 198-201.

Full Text: [2011\App Cla Sci51, 198.pdf](2011/App%20Cla%20Sci51,%20198.pdf)

Abstract: Batch studies of chromate and para-nitrochlorobenzene (p-NCB) on montmorillonite modified by poly (hydroxo aluminium) ions (Al) and cetyl trimethylammonium bromide (CTMAB) are reported. The amounts adsorbed decreased in the order Al-CTMA-mont>CTMA-mont>Al-mont>montmorillonite. Adsorption of chromate on Al-CTMA-mont reached a maximum at pH = 4 while p-NCB was pH independent. The adsorption kinetics could be described by the pseudo-second-order model. The adsorption rates for chromate and p-NCB were 9.73 and 5.78 mg g-1 min-1, respectively. The adsorption capacity of chromate and p-NCB on Al-CTMA-mont calculated by the Langmuir model was 2.3×10-4 and 2.2×10-4 mol/g, the values of the adsorption energy of the Dubinin-Radushkevitch (D-R) model were 13.9 and 7.8 kJ/mol. These results implied that the chromate adsorption proceeded as chemisorption, mainly by ion exchange whereas p-NCB was bound by van der Waals forces. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Aqueous-Solutions, Bentonites, Chromate, Chromium(VI), Inorganic-Organic Montmorillonite, Kinetics, Langmuir, Para-Nitrochlorobenzene, pH, Phenanthrene, Phosphate, Removal, Simultaneous Sorption, Stevensite, Water

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Full Text: [2011\App Cla Sci51, 323.pdf](2011/App%20Cla%20Sci51,%20323.pdf)

Abstract: In this study, the ability to remove ammonium (NH4+) from aqueous solutions with different Na+ concentrations (0.03, 0.1, and 0.3 M) by natural Iranian zeolite in millimeter and nanometer particle sizes was determined and the equilibrium isotherms were characterized. The effect of ionic strength on NH4+ release from Iranian zeolite was also evaluated and several kinetic models were tested. It was demonstrated that the initial NH4+ and Na+ concentrations had significant effect on the amount of NH4+ exchanged. A decrease in Na+ concentration resulted in greater amounts of NH4+ being exchanged and therefore resulted in greater removal efficiency. In addition, three parameter isotherm models (Redlich-Peterson and Langmuir-Freundlich) proved a better fit in terms of the coefficient of determination (R-2) and standard error of estimate (SEE) than two-parameter isotherm models (Langmuir and Freundlich), with the Langmuir model providing a better description of ion-exchange processes than the Freundlich model. NH4+ release was rapid for the first 60 min, but slowed thereafter, and also displayed a concomitant increase with the ionic strength of the solution. The NH4+ release data were successfully described by Elovich, power function, and pseudo second-order models, while the best fit was generally found between the experimental data and the Elovich model with R-2 and SEE ranging from 0.866 to 0.958 and 0.043 to 0.194, respectively. Based on the results, it can be suggested that the natural Iranian zeolite is a suitable ion-exchanger for NH4+ ion removal and consequently has potential as a controlled-release NH4+ fertilizer. (c) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Ammonium Removal, Aqueous-Solution, Clinoptilolite Zeolite, Desorption, Equilibrium, Equilibrium Isotherms, Fertilizer, Freundlich, Ion-Exchange Isotherm, Kinetics, Langmuir, Natural Zeolite, Nitrate, Potassium, Release Kinetics, Tree Fern

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Full Text: [2011\App Cla Sci53, 760.pdf](2011/App%20Cla%20Sci53,%20760.pdf)

Abstract: The adsorption kinetics of two acid dyes, Acid Scarlet GR and Acid Dark Blue 2G, onto a bentonite modified with poly-epichlorohydrin-dimethylamine (EPI-DMA) was studied. The pseudo second-order model showed a high degree of correlation with the experimental data for the whole adsorption process, whereas the intraparticle diffusion model presented two steps with two different diffusion rate constants indicating that the intraparticle diffusion may be involved in the adsorption process during the first 15 min. A two-stage batch adsorber was designed based on the second-order kinetics and was optimized to minimize the total contact time. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Acid Dye, Adsorption, Adsorption Kinetics, Batch Adsorber Design, Bentonite, Cationic-Polymer, Bentonite, Complexes, Diffusion, Dyes, Kinetics, Model, Poly-Epichlorohydrin-Dimethylamine (EPI-DMA), Polymer Modified Bentonite, Pseudo Second Order, Removal, Two-Stage Batch Adsorber

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Full Text: [2011\App Cla Sci54, 34.pdf](2011/App%20Cla%20Sci54,%2034.pdf)

Abstract: Halloysite nanotubes (HNTs) were used as nano-adsorbents for removal of the cationic dye, Malachite Green (MG), from aqueous solutions. The adsorption of the dye was studied with batch experiments. The natural HNTs used as adsorbent in this work were initially characterized by FT-IR and TEM. The effects of adsorbent dose, initial pH, temperature, initial dye concentration and contact time were investigated. Adsorption increased with increasing adsorbent dose, initial pH, and temperature. Equilibrium was rapidly attained after 30 min of contact time. Pseudofirst-order, pseudo-second-order and intraparticle diffusion models were considered to evaluate the rate parameters. The adsorption followed pseudo-second-order kinetic model with correlation coefficients greater than 0.999. The factors controlling adsorption process were also calculated and discussed. The maximum adsorption capacity of 99.6 mg g-1 of MG was achieved in pH = 9.5. Thermodynamic parameters of Δ*G*°, Δ*H*° and Δ*S*° indicated the adsorption process was spontaneous and endothermic. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Adsorbent, Adsorbents, Adsorption, Basic-Dyes, Carbon Nanotubes, Clay, Equilibrium, FTIR, Halloysite Nanotubes, Kinetic, Kinetic Model, Kinetics, Methylene-Blue, Mg, Nano-Adsorbent, pH, Sepiolite, Textile Dye, Thermodynamic, Thermodynamic Parameter, Thermodynamic Parameters, Waste Material, Water

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Full Text: [2011\App Cla Sci54, 90.pdf](2011/App%20Cla%20Sci54,%2090.pdf)

Abstract: An inexpensive and easily available Moroccan natural clay, called locally Ghassoul, was employed for adsorption of methyl violet, a cationic dye, in aqueous solution. The experiments were carried out in a batch system to optimize various experimental parameters such as pH, initial dye concentration, contact time, temperature and ionic strength. The experimental data can be well represented by Langmuir and Freundlich models. The Langmuir monolayer adsorption capacity was estimated as 625 mg/g at 298. Kinetic analyses showed that the adsorption rates were more accurately represented by a pseudo second-order model. Intraparticle diffusion process was identified as the main mechanism controlling the rate of the dye sorption. In addition, various thermodynamic activation parameters, such as Gibbs free energy, enthalpy, entropy and the activation energy were calculated. The adsorption process was found to be a spontaneous and endothermic process. The obtained results confirmed the applicability of this clay as an efficient and economical adsorbent for cationic dyes from contaminated water. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Activation, Adsorbent, Adsorption, Adsorption Kinetics, Adsorption-Kinetics, Anionic Dyes, Blue, Carbon, Color Removal, Fly-Ash, Freundlich, Intraparticle, Intraparticle Diffusion, Kinetic, Langmuir, Low-Cost Adsorbents, Methyl Violet, Natural Clay, pH, Removal, Sepiolite, Textile Waste-Water, Wood Sawdust

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Full Text: [2011\App Cla Sci54, 217.pdf](2011/App%20Cla%20Sci54,%20217.pdf)

Abstract: Experimental and theoretical works were performed for the estimation of the effects of pH, initial concentration, agitation speed, particle size and temperature on the ammonium sorption by local clinoptilolite rich mineral specimen. The kinetic sorption data were analyzed using external mass transfer, intraparticle diffusion, pseudo first and second order kinetic models. Diffusion model results revealed that external film diffusion dominated at the very early stages of sorption process and then it was overcome by intraparticle diffusion. Pseudo-second order kinetic model correlated with the experimental data better than the pseudo first order kinetic model. Sorption isotherm model results indicated that the Langmuir isotherm fitted well to the experimental data. Thermodynamic parameters Gibbs energy change (Δ*G*), enthalpy change (Δ*H*) and entropy change (Δ*S*) were calculated. It was shown that the sorption process was exothermic and spontaneous. The value of the activation energy suggested that ammonium sorption by the clinoptilolite rich mineral specimen is likely due to physical interactions between the sorbent and the sorbate. Analysis of the cation exchange results revealed that ion exchange mechanism was not the only step which was effective in ammonium sorption. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Activation, Adsorption, Ammonium, Aqueous-Solutions, Clinoptilolite Rich Mineral Specimen, Concentration, Diffusion, Dye, Enthalpy, Entropy, Exchange, Intraparticle-Diffusion, Ion Exchange, Ion-Exchange, Ions, Isotherm, Kinetic, Kinetic Models, Kinetics, Langmuir, Langmuir Isotherm, Mechanism, Natural Zeolite, pH, Removal, Sorption, Sorption Isotherm, Sorption Kinetic Model, Temperature, Thermal-Stability, Thermodynamic, Thermodynamic Parameter, Thermodynamic Parameters

? He, M.Y., Zhu, Y., Yang, Y., Han, B.P. and Zhang, Y.M. (2011), Adsorption of cobalt(II) ions from aqueous solutions by palygorskite. *Applied Clay Science*, **54** (3-4), 292-296.

Full Text: [2011\App Cla Sci54, 292.pdf](2011/App%20Cla%20Sci54,%20292.pdf)

Abstract: A study on the removal of cobalt ions from aqueous solutions by palygorskite was conducted under batch conditions. The effect of time, pH of the dispersion, ionic strength, temperature and initial metal concentration on the adsorption of Co2+ onto palygorskite was investigated. The adsorption of Co2+ was a fast process that followed the pseudo-second-order kinetics. This process could be described by the Langmuir model and gave a maximum Co2+ adsorption capacity of 8.88 mg/g at 35ºC. The adsorption was dependent on pH and was influenced by the ionic strength. The adsorption mechanism primarily involved inner-sphere complexation, with minor contributions of the exchange of structural Mg2+ ions. Palygorskite could be completely regenerated with Na2CO3 and continued to exhibit excellent Co2+ adsorption even after three consecutive cycles. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Attapulgite, Cadmium, Cations, Cobalt, Cobalt Ions, Cobalt(II), Complexation, Concentration, Desorption, Equilibrium, Kinetics, Langmuir, Mechanism, Palygorskite, pH, Removal, Sepiolite, Sorption-Desorption, Strength, Temperature

# Title: Applied Ecology and Environmental Research

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? Mathur, N., Bhatnagar, P. and Bakre, P. (2006), Assessing mutagenicity of textile dyes from Pali (Rajasthan) using AMES bioassay. *Applied Ecology and Environmental Research*, **4** (1), 111-118.

Full Text: [2006\App Eco Env Res4, 111.pdf](2006/App%20Eco%20Env%20Res4,%20111.pdf)

Abstract: In Rajasthan state particularly, textile mills represent an important economic sector. Pali district in Rajasthan has got largest number of textile industries in the State i.e. 989 units, mostly engaged in cotton and synthetic textile printing and dyeing. These industries liberate a variety of chemicals, dyes, acids and alkalis besides other toxic compounds like heavy metals, which are known for their hazardous properties. However, excessive and indiscriminate use of dyestuffs has become increasingly a subject of environmental concern. These dyes can enter the environment through the industrial effluents of dye manufacturing plants and from textile dyeing and printing operations, as wastewater effluents. Assessment of genotoxicity of dyes is therefore of utmost importance. Short-term genetic bioassays have proved to be an important tool in such studies because of their simplicity, sensitivity to genetic damage, speed, low cost of experimentation and small amount of sample required. A total of 7 dyes were tested for their mutagenicity, by Ames assay, using strain TA 100 of Salmonella typhimurium. Only 1 dye, Violet showed absence of mutagenic activity. The remaining 6 dyes were all positively mutagenic.

? Srihari, V. and Das, A. (2009), Adsorption of phenol from aqueous media by an agro-waste (*Hemidesmus Indicus*) based activated carbon. *Applied Ecology and Environmental Research*, **7** (1), 13-23.

Full Text: [2009\App Eco Env Res7, 13.pdf](2009/App%20Eco%20Env%20Res7,%2013.pdf)

Abstract: The adsorption of phenol by an agro-waste based activated carbon prepared from the root residue of Hemidesmus Indicus (HIC) was investigated to assess its possible use as adsorbent. The effect of various factors, namely, pH, initial adsorbate concentration, adsorbent dosage and contact time were studied to identify adsorption capacity of HIC. The results were compared to that obtained from adsorption of phenol by commercial activated carbon (CAC). Adsorption data were modeled with the Langmuir and Freundlich isotherms. The kinetic models were also applied for the pseudo-first-order, pseudo-second-order, intra-particle diffusion and pore diffusion coefficients. Although HIC and CAC showed much similar isotherm models and kinetics, yet HIC was found to show much higher boundary layer effect and pore-diffusion coefficients, in relation to CAC.

Keywords: Acid, Activated Carbon, Adsorbent, Adsorbent Dosage, Adsorption, Adsorption Capacity, Adsorption Kinetics, Agro-Waste, Agrowaste, Boundary Layer, Capacity, Carbon, Concentration, Data, Diffusion, Diffusion Coefficients, Dyes, Freundlich, Intra Particle Diffusion, Intra-Particle Diffusion, Intraparticle Diffusion, Isotherm, Isotherms, Kinetic, Kinetic Models, Kinetics, Langmuir, Langmuir And Freundlich Isotherms, Models, pH, Phenol, Pore Diffusion, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Water

? Elass, K., Laachach, A., Alaoui, A. and Azzi, M. (2010), Removal of Methylene Blue from aqueous solution using Ghassoul, a low-cost adsorbent. *Applied Ecology and Environmental Research*, **8** (2), 153-163.

Full Text: [2010\App Eco Env Res8, 153.pdf](2010/App%20Eco%20Env%20Res8,%20153.pdf)

Abstract: The present study examined the use of ghassoul, natural clay available in large quantities under the Atlas Mountains in Morocco, for the removal of the basic dye, methylene blue, from aqueous solutions. The effect of initial dye concentrations, agitation time, pH and temperature on adsorption capacities of methylene blue was investigated. The initial pH of the aqueous solution and the change of temperature (25-55°C) were found to have little effect on the adsorption process. The adsorption was a rapid with 90-99% of the dye removed within the first 10-20 min. The adsorption kinetics are described successfully using a pseudo-second order rate equation and the rate constant decreases with increasing the initial concentration of MB. Experimental and calculated kinetic data for equilibrium are well expressed by Langmuir isotherm. The equilibrium adsorption capacity of ghassoul was determined with the Langmuir equation as well as the pseudo-second-order rate equation and found to be >290 mg dye per gram of the adsorbent. The results indicate that ghassoul could be employed as a low cost alternative to commercial activated carbon in wastewater treatment for the removal of colour and dyes.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Kinetics, Adsorption-Kinetics, Basic Dye, Color Removal, Dye, Dyes, Dyestuffs, Effluent, Equilibrium, Equilibrium Adsorption, Fly-Ash, Isotherm, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Low, Natural Clay, Perlite, Removal, Textile Waste-Water, Wastewater Treatment

# Title: Applied Economics

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García-Castrillo, P., Montañés, A. and Sanz-Gracia, F. (2002), A worldwide assessment of scientific production in economics (1992–1997). *Applied Economics*, **34** (12), 1453-1475.

Full Text: [2002\App Eco34, 1453.pdf](2002/App%20Eco34,%201453.pdf)

Abstract: The aim of this article is to analyse the worldwide production in economics. To that end, bibliometric indicators are constructed by way of a database made-up of 55 international journals, covering the period 1992–1997. A ranking of the leading thousand international affiliations is established and quality indices of the first 200 are presented. Finally, a detailed analysis is carried out at country level and with respect to the 12 leading countries.

Keywords: Assessment, Bibliometric, Bibliometric Indicators, Core Journals, Countries, Database, Departmental Rankings, Indicators, Journals, Publications, Quality, Scientific Production, Update, US

? Barrett, C.B., Olia, A. and Von Bailey, D. (2000), Subdiscipline-specific journal rankings: Whither *Applied Economics*? *Applied Economics*, **32** (2), 239-252.

Full Text: [2000\App Eco32, 239.pdf](2000/App%20Eco32,%20239.pdf)

Abstract: In light of widespread specialization of research and teaching, it seems appropriate to supplement the existing general rankings of economics journals with subdiscipline-specific rankings. That is the primary objective of this paper. The availability of subdiscipline-specific rankings also permits both (i) alternative journal ranking methods for the general discipline that account for the breadth of a journal’s impact across specialized fields, and (II) estimation of the relative weights implicitly associated with each field in traditional disciplinary journal rankings. The results are robust to the exclusion of self-citations.

Keywords: Journals, Relative Impacts, Research, Self-Citations

? Schubert, T. and Grupp, H. (2011), Tests and confidence intervals for a class of scientometric, technological and economic specialization ratios. *Applied Economics*, **43** (8), 941-950.

Full Text: [2011\App Eco43, 941.pdf](2011/App%20Eco43,%20941.pdf)

Abstract: In economic, scientometric and innovation research, often so-called specialization indices are used. These indices measure comparative strengths or weaknesses as well as specialization profiles of the observation units with respect to certain criteria, such as patenting and publication or trade activities. They allow question like: is Germany specialized in the export of motor vehicles? Or is the UK specialized in biotech patents? Unfortunately, little is known about their statistical properties, which makes valid inferencing difficult. In this article we prove asymptotic normality for a certain class of scientometric, technological and some economic, though nonmonetary, specialization indices. We provide asymptotic confidence intervals and demonstrate in an example how to obtain statistically sound results. We will also address the problem of normalization of these indicators. All procedures proposed are provided in an add on package for R statistical environment.

Keywords: Confidence, Confidence Intervals, Criteria, Economic, Environment, Export, Flows, Germany, Impact, Indicators, Indices, Innovation, Innovations, International-Trade, Intervals, Intra-Industry Trade, Measure, Normalization, Observation, Patents, Procedures, Profiles, Publication, Research, Scientometric, Sound, UK

? Brown, C.L., Chan, K.C. and Chen, C.R. (2011), First-author conditions: Evidence from finance journal coauthorship. *Applied Economics*, **43** (25), 3687-3697.

Full Text: [2011\App Eco43, 3687.pdf](2011/App%20Eco43,%203687.pdf)

Abstract: We study the trend and the author name-ordering rule in finance publication using the publication records of 21 core finance journals during the period from 1990 to 2004. We empirically model the underlying factors that affect the alphabetical ordering rule among multi-authored finance articles. We find that the choice of alphabetical ordering is based on the quality of the article, institutional heterogeneity, team size and cultural factors. The central argument rests upon the need to signal and the importance of signalling within the context of bargaining behaviour among coauthors. The probability of choosing alphabetical name ordering rule is associated with high article quality, higher ranked institutions, smaller research team and the presence of European authors.

Keywords: Co-Authorship, Economics, Patterns

# Title: Applied Energy

Full Journal Title: [Applied Energy](http://www.sciencedirect.com/science/journal/03062619)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0306-2619

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ayotamuno, M.J., Okparanma, R.N., Ogaji, S.O.T. and Probert, S.D. (2007), Chromium removal from flocculation effluent of liquid-phase oil-based drill-cuttings using powdered activated carbon. *Applied Energy*, **84** (10), 1002-1011.

Full Text: [2007\App Ene84, 1002.pdf](2007/App%20Ene84,%201002.pdf)

Abstract: The practice of injecting the flocculation effluent of liquid-phase oil-based drill-cuttings (LPOBDCs) into the ground is a popular current disposal-option for this type of drilling waste in Nigeria. Unfortunately, this practice leads to environmental degradation because this flocculation effluent contains high concentrations of chromium (Cr6+), which is a heavy-metal pollutant. Consequently, it is recommended that the flocculation effluent be treated in a batch adsorption process, using powdered activated-carbon (PAC) in order to improve the quality of the flocculation effluent before its sub-surface injection. A representative sample of the untreated LP-OBDC was collected from a mud pit close to an oil-well in the Niger Delta region of Nigeria. Initial characterization of the untreated LP-OBDC showed that the concentration of Cr6+ was 5.26 g/m3. Flocculation of the LP-OBDCs was carried out using aluminum sulphate and sodium chloride as coagulant and flocculant, respectively. After flocculation, the Cr6+ was reduced to 5.01 g/m3 (i.e. a 4.75% reduction). The flocculation effluent was then subjected to an activated-carbon batch-adsorption process. At the end of the process, the Cr6+ content was further reduced to 2.77 g/m3 (i.e. a 44.7% reduction), which shows a significant improvement on the quality of the flocculation effluent. The adsorption mechanism of Cr6+ onto the PAC fitted the 2 second-order kinetic model (with R2 = 1.00 approximately) with equilibrium being attained within 60 minutes of contact time. Performance characteristics of the PAC show that the maximum adsorption capacity of the adsorbent at equilibrium is 1.60 mg/g (i.e. a 64.0% adsorption) at the initial chromium-concentration, CO, of 2.50 g/m3. Also, adsorption-capacity data, obtained using the regressed Freudlich’s isotherm (Qe = 0.768 Ce(1/1.32)), were quite close to the pertinent experimental data (with R2 = 0.981). The adsorption intensity, n, is 1.32, indicating a strongly favourable adsorption, which shows that a large amount of chromium is adsorbed at low concentrations of adsorbate in the flocculation effluent. (c) 2007 Elsevier Ltd. All rights reserved.

Keywords: Activated Carbon, Activated-Carbon Adsorption, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Mechanism, Adsorption Process, Aluminum, Batch, Batch Adsorption, Capacity, Carbon, Characteristics, Characterization, Chloride, Chromium, Co, Concentration, Concentrations, Contact Time, Cr6+, Current, Degradation, Drilling, Effluent, Environmental, Environmental Degradation, Equilibrium, Experimental, Experimental Data, Flocculation, Heavy Metal, Heavy-Metal, Heavy-Metal Removal, High Concentrations, Injection, Intensity, Isotherm, Kinetic, Kinetic Model, Liquid Phase, Low, Mechanism, Model, Mud, Niger, Nigeria, Oil-Based Drill-Cuttings, Order, Pac, Pollutant, Powdered Activated Carbon, Practice, Process, Quality, Reduction, Removal, Second Order, Sodium, Subsurface, Sulphate, Time, Waste

? Konur, O. (2011), The scientometric evaluation of the research on the algae and bio-energy. *Applied Energy*, **88** (10), 3532-3540.

Full Text: [2011\App Ene88, 3532.pdf](2011/App%20Ene88,%203532.pdf)

Abstract: The present study explores the characteristics of the literature on the algae and bio-energy published during the last three decades, based on the database of Science Citation Index-Expanded (SCIE) and Social Sciences Citation Index (SSCI) and its implications using the scientometric techniques. The results of this work reveal that the literature on the algae and bio-energy has grown exponentially during this period reaching 717 papers in total. Most of document type is in the form of journal articles, reviews, and proceedings, constituting 98% of the total literature and English is the predominant language (97.6%). USA, China, Germany, and England are the four biggest contributing countries on the algae and bio-energy literature publishing, 26%, 8%, 8%, and 8% of the sample, respectively. The Chinese Academy of Sciences is the largest institutional contributor publishing 2.6% of the papers. The most publishing four authors are Wilhelm (13 papers) followed by Wu (15 papers), Mimuro (10 papers), and Zhao (9 papers). “Bioresource Technology” is the most publishing journal with 24 published papers, followed by “Journal of Applied Phycology” (17 papers). and “Biotechnology and Bioengineering” (15 papers). “Biotechnology & Applied Microbiology” is the subject area with 24.3% of the sample published. This is followed by “Energy & Fuels” (16.3%), “Marine & Freshwater Biology” (14.2%), and “Environmental Sciences” (12.3%). The total number of citations is 11,079, giving a ratio for the “Average Citations per Item” as 15.45 and “H-index” as 52. A list of most-cited 25 authors is produced and Chisti (2007) receives 320 citations with 80 total average citations per year. This paper is followed by Lewis and Nocera (2006; 296 citations). Demirbas (2001; 187 citations). Chisti (2007) has the highest impact on the literature on the algae and energy with total average citations per year of 80. This is followed by Lewis and Nocera (2006, 59.8 annual citations) and Chisti (20(18, 41 annual citations). An analysis of the citing papers shows the impact of the research on the algae and bio-energy for the related academic disciplines. This provides further incentives for all the stakeholders of the research on the algae and energy, but especially for the researchers and their institutions and their countries to do more research in this area. The results of this first ever such study of its kind show that the scientometric analysis has a great potential to gain valuable insights into the evolution of the research the on algae and bio-energy as in the case of new emerging technologies and processes such as nanoscience and nanotechnology complementing literature reviews, content analysis and metaanalysis research techniques. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Algae, Authors, Bio-Energy, Biodiesel Production, Biofuel Production, Biofuels, Biomass, Challenges, China, Citation, Citations, Content Analysis, Efficiency, England, Evaluation, Flow, Fluorescence, Hydrogen-Production, Impact, Incentives, Journal, Literature, Microalga Chlorella-Protothecoides, Microalgae, Papers, Publishing, Research, Research Evaluation, Science, Scientometric Analysis, Scientometric Techniques, Scientometrics, Social Sciences, Stable-Isotopes

? Duan, L.P. (2011), Analysis of the relationship between international cooperation and scientific publications in energy R&D in China. *Applied Energy*, **88** (12), 4229-4238.

Full Text: [2011\App Ene88, 4229.pdf](2011/App%20Ene88,%204229.pdf)

Abstract: Energy is important for China and for the whole world. Previously, the huge investment in energy-related research and commercialisation made it possible for China to cooperate with its international partners in various channels, and programs involving international cooperation and co-published papers increased annually. In this paper, through the review of intergovernmental cooperation programs and bibliometric analysis of the top energy journals, it was found that: (1) intergovernmental cooperation and non-governmental cooperation are two effective channels for energy R&D. (2) In these two channels, most participants of international cooperation are universities and institutes, and the most important partner countries are the US, Japan, and European Countries. (3) Industries began to be involved in international cooperation gradually. (4) For different areas, the degree of cooperation is not the same. Some areas have been more fruitful in cooperation, some are just beginning hydrogen energy, fuel energy and applied energy are the main co-publication areas with Chinese involvement; while wind energy, solar energy, fuel cells and bio-energy are new areas for China and there has not been so much co-publication until now. (C) 2011 Elsevier Ltd. All rights reserved.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, China, Cooperation, Energy, Energy R&D, Gas Hydrate, India, International Cooperation, Involvement, Japan, Journals, Papers, Prediction, Publications, Research, Review, Scientific Publications, US

# Title: Applied Engineering in Agriculture

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Subject Categories:

: Impact Factor

? Moazed, H., Bavi, A. and Heydari, Z.S. (2011), Modeling cadmium adsorption using modified rice husk. *Applied Engineering in Agriculture*, **27** (2), 247-252.

Full Text: [2011\App Eng Agr27, 247.pdf](2011/App%20Eng%20Agr27,%20247.pdf)

Abstract: In the present study, rice husk was modified with 0.1, 0.3, 0.5, and 0.7 molar sodium bicarbonate solution and used to remove cadmium ions from synthetic wastewater with 0.1 mgL-1 cadmium ion concentration. Batch studies showed that the equilibrium time for sorption of cadmium ions by modified rice husk was 1.5 h for all adsorbents used. Results of the study clearly indicated that Lagergren’s pseudo first-order and Ho’s pseudo second-order equations modeled well the kinetics of sorption of synthetic wastewater by modified rice husk. Batch isotherm experiments showed that, in general, the most appropriate isotherm for cadmium ion adsorption by all adsorbents was the Freundlich model. The results of the study also showed that the modified rice husk was an excellent medium for treating cadmium-contaminated wastewaters.

Keywords: Adsorption, Aqueous-Solutions, Batch, Cadmium, Cadmium Ions, Equilibrium, Fly-Ash, Freundlich, Isotherm, Isotherm Models, Kinetic Models, Kinetics, Low-Cost Adsorbent, Metals, Modified, Modified Rice Husk, Peat, Removal, Rice Husk, Sorption, Waste-Water, Wastewater, Wastewater Treatment

# Title: Applied and Environmental Microbiology

Full Journal Title: [Applied and Environmental Microbiology](http://www.pubmedcentral.nih.gov/tocrender.fcgi?journal=83&action=archive)

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Biotechnology & Applied Microbiology: Impact Factor 3.389, 15/134 (2000); Impact Factor 3.818, 21/139 (2005)

Microbiology: Impact Factor 3.389, 14/83 (2000); Impact Factor 3.818, 19/86 (2005)

Vasconcelos, G.J. and Swartz, R.G. (1976), Survival of bacteria in seawater using a diffusion chamber apparatus in situ. *Applied and Environmental Microbiology*, **31** (6), 913-920.

Full Text: [A\App Env Mic31, 913.pdf](A/App%20Env%20Mic31,%20913.pdf)

Abstract: A microbiological survival chamber for in situ environmental studies involving microorganisms of public health significance was developed. The autoclavable chamber was provided with a supportive base for proper flow orientation and a battery-powered stirring mechanism for continuous internal agitation. The performance of the chamber and its ancillary units was evaluated in estuarine waters by diffusion studies and survival tests with eight species of bacteria isolated from environmental sources. Polycarbonate filter membranes were found superior to cellulosic filter membranes. Continuous mixing enhanced diffusion and ensured uniform cell suspension. Salmonella enteritidis and Klebsiella pneumoniae exhibited somewhat greater viability than *Escherichia coli* under similar conditions. of three indicator organisms tested, Streptococcus faecalis was the most persistent. In general, the data obtained indicate the usefulness of the chamber in measurements of microbial survival in the natural marine environment.

Buford, L.E., Pickett, M.S. and Hartman, P.A. (1977), Sanitation in self-service automatic washers. *Applied and Environmental Microbiology*, **33** (1), 74-78.

Full Text: [A\App Env Mic33, 74.pdf](A/App%20Env%20Mic33,%2074.pdf)

Abstract: The potential for microbial transfer in self-service laundry washing machines was investigated by obtaining swab samples from the interior surfaces of commercial machines and wash water samples before and after disinfectant treatment. Three disinfectants (chlorine, a quaternary ammonium product, and a phenolic disinfectant) were used. Four self-service laundry facilities were sampled, with 10 replications of the procedure for each treatment at each location. Although washers were set on a warmwater setting, the wash water temperatures ranged from 24 to 51°C. The quaternary ammonium product seemed most effective, averaging a 97% microbial kill; chlorine was the second most effective, with a 58% kill, and the phenolic disinfectant was least effective, with only a 25% kill. The efficacies of the chlorine and phenolic disinfectants were reduced at low water temperatures commonly experienced in self-service laundries. Interfamily cross-contamination in self-service facilities is a potential public health problem, which is aggravated by environmental conditions, such as water temperature and the practices of the previous users of the equipment. Procedural changes in laundering are recommended, including the use of a disinfectant to maintain adequate levels of sanitation.

Sadovski, A.Y., Fattal, B., Goldberg, D., Katzenelson, E. and Shuval, H.I. (1978), High levels of microbial contamination of vegetables irrigated with wastewater by the drip method. *Applied and Environmental Microbiology*, **36** (6), 824-830.

Full Text: [A\App Env Mic36, 824.pdf](A/App%20Env%20Mic36,%20824.pdf)

Abstract: The public health aspects of the use of wastewater in agriculture and the effects of the drip irrigation method on the contamination of vegetables were studied. The method used was to simulate enteric microorganisms’ dissemination by contaminated irrigation water in the field. The vegetables were irrigated with an effluent inoculated with a high titer of traceable microorganisms: poliovirus vaccine and a drug-resistant *Escherichia coli*. The dissemination of the marker organisms in the field was followed, and the effects of certain manipulations of the drip irrigation method on the contamination of the crops by the effluent were examined. It was shown that drip irrigation under plastic sheet cover with the drip lines placed either on the soil surface or buried at a depth of 10 cm significantly reduced crop contamination from inoculated irrigation water even when massive doses of bacteria and viruses were used. The microbial contamination was found to persist in the irrigation pipes and in the soil for at least 8 and 18 days, respectively. The data indicate that the recovery of the marker organisms was affected by soil texture and environmental conditions.

Sandhu, S.S., Warren, W.J. and Nelson, P. (1979), Magnitude of pollution indicator organisms in rural potable water. *Applied and Environmental Microbiology*, **37** (4), 744-749.

Full Text: [A\App Env Mic37, 744.pdf](A/App%20Env%20Mic37,%20744.pdf)

Abstract: A total of 460 water samples were randomly drawn from the potable water supply sources of rural communities in three counties of South Carolina. About 10% of the population, not incorporated in municipalities, was sampled. The samples were tested for total coliforms, *Escherichia coli*, and fecal streptococci. Significant levels of these pollution indicator organisms were detected in almost all the water supplies. Total coliforms were the most common, and only 7.5% of the water supplies were uncontaminated. E. coli, considered a reliable indicator of recent and dangerous pollution, was observed in 43% of the water supplies. Statistical analyses indicated that the bacterial populations, especially E. coli, were associated with the supply source depth and its distance from the septic tank. Total coliform counts were also weakly correlated to the pH of the water.

Notes: highly cited

? Boethling, R.S. and Alexander, M. (1979), Effect of concentration of organic-chemicals on their biodegradation by natural microbial communities. *Applied and Environmental Microbiology*, **37** (6), 1211-1216.

Full Text: [1960-80\App Env Mic37, 1211.pdf](1960-80/App%20Env%20Mic37,%201211.pdf)

Abstract: The effect of concentration on the biodegradation of synthetic organic chemicals by natural microbial communities was investigated by adding individual 14C-labeled organic compounds to stream water at various initial concentrations and measuring the formation of 14CO2. The rate of degradation of p-chlorobenzoate and chloroacetate at initial concentrations of 47 pg/ml to 47 μg/ml fell markedly with lower initial concentrations, although half or more of the compound was converted to CO2 in 8 days or less. On the other hand, little mineralization of 2,4-dichlorophenoxyacetate and 1-naphthyl-N-methylcarbamate, or the naphthol formed from the latter, occurred when these compounds were present at initial concentrations of 2 to 3 ng/ml or less, although 60% or more of the chemical initially present at higher concentrations was converted to CO2 in 6 days. It is concluded that laboratory tests of biodegradation involving chemical concentrations greater than those in nature may not correctly assess the rate of biodegradation in natural ecosystems and that low substrate concentration may be important in limiting biodegradation in natural waters.

Standridge, J.H., Delfino, J.J., Kleppe, L.B. and Butler, R. (1979), Effect of waterfowl (*Anas platyrhynchos*) on indicator bacteria populations in a recreational lake Madison, Wisconsin. *Applied and Environmental Microbiology*, **38** (3), 547-550.

Full Text: [A\App Env Mic38, 547.pdf](A/App%20Env%20Mic38,%20547.pdf)

Abstract: A public swimming beach in Madison, wis., experienced intermittent high fecal coliform counts during the late summer and early fall of 1978. Public health officials closed the beach on a number of occasions. A public health survey identified a combination of waterfowl wastes and meteorological events as the explanation for the high bacteria counts. Fecal coliform bacteria were deposited by mallard ducks and multiplied in the beach sands. The bacteria were subsequently transported into the lake and resulted in high fecal coliform counts in the swimming area.

Wyatt, L.E., Nickelson II, R. and Vanderzant, C. (1979), *Edwardsiella tarda* in freshwater catfish and their environment. *Applied and Environmental Microbiology*, **38** (4), 710-714.

Full Text: [A\App Env Mic38, 710.pdf](A/App%20Env%20Mic38,%20710.pdf)

Abstract: *Edwardsiella tarda* was isolated from 47, 88, and 79% of skin, visceral, and dressed-fish samples, respectively. This species was also isolated from 30% of imported dressed fish, 75% of catfish pond water samples, 64% of catfish pond mud samples, and 100% of frogs, turtles, and crayfish from catfish ponds. The incidence of Edwardsiella increased during the summer months, as water temperatures increased. of several isolation media evaluated, the most effective was selective enrichment in double-strength Salmonella-Shigella broth and subsequent plating on single-strength Samonella-Shigella agar. The significance of the incidence of Edwardsiella in catfish, catfish disease, and public health could not be substantiated.

Luchtel, D.L., Lawrence, W.P. and De Walle, F.B. (1980), Electron microscopy of *Giardia lamblia* cysts. *Applied and Environmental Microbiology*, **40** (4), 821-832.

Full Text: [A\App Env Mic40, 821.pdf](A/App%20Env%20Mic40,%20821.pdf)

Abstract: The flagellated protozoan *Giardia lamblia* is a recognized public health problem. Intestinal infection can result in acute or chronic diarrhea with associated symptoms in humans. As part of a study to evaluate removal of G. lamblia cysts from drinking water by the processes of coagulation and dual-media filtration, we developed a methodology by using 5.0-microns-porosity membrane filters to evaluate the filtration efficiency. We found that recovery rates of G. lamblia cysts by membrane filtration varied depending upon the type and diameter of the membrane filter. Examination of membrane-filtered samples by scanning electron microscopy revealed flexible and flattened G. lamblia cysts on the filter surface. This feature may be responsible for the low recovery rates with certain filters and, moreover, may have implications in water treatment technology. Formation of the cyst wall is discussed. Electron micrographs of cysts apparently undergoing binary fission and cysts exhibiting a possible bacterial association are shown.

Shaffer, P.T., Metcalf, T.G. and Sproul, O.J. (1980), Chlorine resistance of poliovirus isolants recovered from drinking water. *Applied and Environmental Microbiology*, **40** (6), 1115-1121.

Full Text: [A\App Env Mic40, 1115.pdf](A/App%20Env%20Mic40,%201115.pdf)

Abstract: Poliovirus 1 isolants were recovered from finished drinking water produced by a modern, well-operated water treatment plant. These waters contained free chlorine residuals in excess of 1 mg/liter. The chlorine inactivation of purified high-titer preparations of two such isolants was compared with the inactivation behavior of two stock strains of poliovirus 1, LSc and Mahoney. The surviving fraction of virus derived from the two natural isolants was shown to be orders of magnitude greater than that of the standard strains. These results raise the question whether indirect drinking water standards based on free chlorine residuals are adequate public health measures, or whether direct standards based on virus determinations might be necessary.

Strandberg, G.W., Shumate II, S.E. and Parrott, Jr., J.R. (1981), Microbial cells as biosorbents for heavy metals: Accumulation of uranium by *Saccharomyces cerevisiae* and *Pseudomonas aeruginosa*. *Applied and Environmental Microbiology*, **41** (1), 237-245.

Full Text: [A\App Env Mic41, 237.pdf](A/App%20Env%20Mic41,%20237.pdf)

Abstract: Uranium accumulated extracellularly on the surfaces of *Saccharomyces cerevisiae* cells. The rate and extent of accumulation were subject to environmental parameters, such as pH, temperature, and interference by certain anions and cations. Uranium accumulation by *Pseudomonas aeruginosa* occurred intracellularly and was extremely rapid (<10 s), and no response to environmental parameters could be detected. Metabolism was not required for metal uptake by either organism. Cell-bound uranium reached a concentration of 10 to 15% of the dry cell weight, but only 32% of the *S. cerevisiae* cells and 44% of the *P. aeruginosa* cells within a given population possessed visible uranium deposits when examined by electron microscopy. Rates of uranium uptake by *S. cerevisiae* were increased by chemical pretreatment of the cells. Uranium could be removed chemically from *S. cerevisiae* cells, and the cells could then be reused as a biosorbent.

Ridgway, H.F. and Olson, B.H. (1981), Scanning electron microscope evidence for bacterial colonization of a drinking-water distribution system. *Applied and Environmental Microbiology*, **41** (1), 274-287.

Full Text: [A\App Env Mic41, 274.pdf](A/App%20Env%20Mic41,%20274.pdf)

Abstract: The surfaces of water distribution mains and suspended particulate matter from drinking water were examined by using scanning electron microscopy to investigate the nature and extent of association of microorganisms with these surfaces. In addition, X-ray energy-dispersive microanalysis was used to determine the elemental constitution of the pipe surface. Though distributed sparsely and randomly along the pipe surface, a variety of morphologically distinguishable bacteria-like structures and microcolonies were observed. The morphologies of the individual cells varied form chain-forming cocci to filamentous and prosthecate cell types. The iron-oxidizing bacterium Gallionella, recognized by its characteristic helical stalks, was observed both in water samples and attached to pipe surfaces. Attachment of some microbes to the pipe surface was apparently mediated by extracellular fibrillar appendages. Large numbers of rod-shaped bacteria were also evident adhering to the surfaces of suspended detritus or silt particles recovered from water samples by filtration. X-ray energy scans of the pipe surface revealed the presence of five major elemental constituents including silicon, phosphorous, sulfur, calcium, and iron. Smaller quantities of the elements zinc, magnesium, aluminum, potassium, and manganese were also detected. The public health significance of sessile microbial communities in drinking-water distribution systems is discussed.

Tobin, R.S., Smith, D.K. and Lindsay, J.A. (1981), Effects of activated carbon and bacteriostatic filters on microbiological quality of drinking water. *Applied and Environmental Microbiology*, **41** (3), 646-651.

Full Text: [A\App Env Mic41, 646.pdf](A/App%20Env%20Mic41,%20646.pdf)

Abstract: Three activated carbon filters for point-of-use water treatment were tested in laboratory and field studies for chemical removal and microbiological effects on water. All removed free available chlorine in municipally treated water to below the limit of detection, but removed only about 50 to 70% of the total available chlorine and 4 to 33% of the total organic carbon. Standard plate count bacteria in the effluent increased steadily with time for 3 weeks and remained elevated over the 8-week period of the study. Total coliform bacteria were found to persist and proliferate on the filters for several days after transient contamination of the influent water. Silver-containing activated carbon filters suppressed total coliform but not total bacterial growth. Pseudomonas aeruginosa was recovered from the effluents of all filters at some time during the tests.

Hassett, J.M., Jenneet, J.C. and Smith, J.E. (1981), Microplate technique for determining accumulation of metals by algae. *Applied and Environmental Microbiology*, **41** (5), 1097-1106.

Full Text: [A\App Env Mic41, 1097.pdf](A/App%20Env%20Mic41,%201097.pdf)

Abstract: A microplate technique was developed to determine the conditions under which pure cultures of algae removed heavy metals from aqueous solutions. Variables investigated included algal species and strain, culture age (11 and 44 days), metal (mercury, lead, cadmium, and zinc), pH, effects of different buffer solutions, and time of exposure. Plastic, U-bottomed microtiter plates were used in conjunction with heavy metal radionuclides to determine concentration factors for metal-alga combinations. The technique developed was rapid, statistically reliable, and economical of materials and cells. Results (expressed as concentration factors) were in reasonably good agreement with literature values. All species of algae studied removed mercury from solution. Green algae proved better at accumulating cadmium than did blue-green algae. No alga studied removed zinc, perhaps because cells were maintained in the dark during the labeling period. *Chlamydomonas* sp. proved superior in ability to remove lead from solution.

Beveridge, T.J. and Koval, S.F. (1981), Binding of metals to cell envelopes of *Escherichia coli* K-12. *Applied and Environmental Microbiology*, **42** (2), 325-335.

Full Text: [A\App Env Mic42, 325.pdf](A/App%20Env%20Mic42,%20325.pdf)

Abstract: As representative of gram-negative bacteria, the isolated and purified envelopes of an Escherichia coli K-12 strain were used to determine metal-binding capacity. The envelopes were suspended in 5 mM metal solutions for 10 min and 23°C, separated and washed by centrifugation, and analyzed for metal by either atomic absorption or X-ray fluorescence spectroscopy. of 32 metals tested, large amounts (> 0.9 mumol/mg [dry weight]) of Hf and Os, intermediate amounts (0.1 to 0.4 mumol/mg [dry weight]) of Pb, Zn, Zr, Fe III, Mn, Mo, Mg, Co, and Ce IV, and small amounts (< 0.1 mumol/mg [dry weight]) of Na, K, Rb, Ca, Sr, Cu, Sc, La, Pr, Sm, U, Fe II, Ru, Ni, Hg, Pt, Pd, Au, and In were detected Li and V were not bound to the envelopes. Electron microscopy of unstained, thin-sectioned material provided an electron-scattering profile for localizing the bound metal within the envelope. Energy-dispersive X-ray analysis of thin sections detected all metals in single envelope vesicles. These data suggest that most metal deposition occurred at the polar head group regions of the constituent membranes or along the peptidoglycan layer. No leaching of envelope components was detected by monitoring radioactive probes within the lipopolysaccharide and peptidoglycan layers during metal uptake experiments, sodium dodecyl sulfate-polyacrylamide gel electrophoresis of proteins from metal-loaded envelopes, or protein and carbohydrate determinations on the wash fluids. These results suggest that membrane integrity was not disturbed under these ionic conditions.

Standridge, J.H. and Delfino, J.J. (1981), A-1 medium: Alternative technique for fecal coliform organism enumeration in chlorinated wastewaters. *Applied and Environmental Microbiology*, **42** (5), 918-920.

Full Text: [A\App Env Mic42, 918.pdf](A/App%20Env%20Mic42,%20918.pdf)

Abstract: A 24-h most-probable-number technique using A-1 medium for detecting fecal coliforms in chlorinated wastewaters was evaluated. The A-1 medium technique, using 3 h of preincubation at 35°C, gave results statistically equivalent to those obtained with the American Public Health Association Standard Methods two-step most-probable-number technique.

Kurek, E., Czaban, J. and Bollag, J.M. (1982), Soeption of cadmium by microorganisms in competition with other soil constituents. *Applied and Environmental Microbiology*, **43** (5), 1011-1015.

Full Text: [A\App Env Mic43, 1011.pdf](A/App%20Env%20Mic43,%201011.pdf)

Abstract: The fate of cadmium in soil is influenced to a great extent by microbial activity. Microorganisms were compared with abiotic soil components for their ability to sorb Cd from a liquid medium. When the same amount (on a dry weight basis) of bacterial cells (*Serratia marcescens* and *Paracoccus* sp.), clay (montmorillonite), or sand was separately incubated in 0.05 M phosphate buffer, pH 7.2, containing 10 ppm of Cd (10 μg/ml), bacterial cells removed the largest quantity of Cd. Dead cells sorbed much more Cd from the medium than live cells. A comparative study of Cd removal from the medium by seven soil bacteria and four fungi did not indicate appreciable differences. With increasing microbial biomass, the relative efficiency of 0.1 M NaOH as an extractant of sorbed Cd increased, whereas the extraction efficiency of 0.005 M DTPA (diethylenetriaminepentaacetic acid) decreased. It appeared that NaOH and DTPA extracted different chemical forms of Cd. This assumption was supported by vastly different correlation coefficients in the relative amount of Cd extracted by the two solvents.

Hoyle, B. and Beveridge, T.J. (1983), Binding of metallic ions of the outer membrane of *Escherichia coli*. *Applied and Environmental Microbiology*, **46** (3), 749-752.

Full Text: [A\App Env Mic46, 749.pdf](A/App%20Env%20Mic46,%20749.pdf)

Abstract: The binding of metal ions by the outer membrane of Escherichia coli K-12 strain AB264 was investigated by using outer membrane obtained after Triton X-100 extraction of purified cell envelopes. Binding studies, conducted under saturating conditions, indicated a selective trapping of certain metallic ions. Low-dose electron microscopy of metal-loaded samples revealed an aggregative deposition of lead on one surface of the membrane which suggests that at least one distinctive binding site is asymmetrically arranged in these outer membrane vesicles.

Standridge, J.H. and Delfino, J.J. (1983), Effect of ambient temperature storage on potable water coliform population estimations. *Applied and Environmental Microbiology*, **46** (5), 1113-1117.

Full Text: [A\App Env Mic46, 1113.pdf](A/App%20Env%20Mic46,%201113.pdf)

Abstract: The effect of the length of time between sampling potable water and performing coliform analyses has been a long-standing controversial issue in environmental microbiology. The issue is of practical importance since reducing the sample-to-analysis time may substantially increase costs for water analysis programs. Randomly selected samples (from those routinely collected throughout the State of Wisconsin) were analyzed for total coliforms after being held at room temperature (20±2°C) for 24 and 48 h. Differences in results for the two holding times were compared with differences predicted by probability calculations. The study showed that storage of the potable water for up to 48 h had little effect on the public health significance of most samples containing more than two coliforms per 100 ml.

Geller, A. (1983), Growth of bacteria in inorganic medium at different levels of airborne organic-substances. *Applied and Environmental Microbiology*, **46** (6), 1258-1262.

Full Text: [A\App Env Mic46, 1258.pdf](A/App%20Env%20Mic46,%201258.pdf)

Abstract: Invasion rates of airborne organic substances into sterile mineral medium were compared by using flasks closed with cotton stoppers, silicone stoppers, and screw caps with Teflon gaskets. The resulting increases of dissolved organic carbon were 0.5, 0.2, and 0 mg/liter per week, respectively. The compounds supported the growth of lake water bacteria and a strain of *Pseudomonas fluorescens*. Growth rates were correlated to the permeability of the stoppers used. The measured input of organic carbon in the sterile mineral medium is considered to be a minimum value for the actual contribution of organic compounds by the air. Multiplication rates of the bacteria suggest that the organisms prevent the escape of volatile organic substances from the medium by rapid utilization. The steady nutrient supply through the air should be considered in growth experiments with bacteria at low concentrations of nutrients.

Tobin, J.M., Cooper, D.G. and Neufeld, R.J. (1984), Uptake of metal ions by *Rhizopus Arrhizus* biomass. *Applied and Environmental Microbiology*, **47**, 821-824.

Full Text: [A\App Env Mic47, 821.pdf](A/App%20Env%20Mic47,%20821.pdf)

Abstract: *Rhizopus Arrhizus* biomass was found to absorb a variety of different metal cations and anions but did not absorb alkali metal ions. The amount of uptake of the cations was directly related to ionic radii of La3+, Mn2+, Cu2+, Zn2+, Cd2+, Ba2+, Hg2+, Pb2+, UO22+, and Ag+. The uptake of all the cations is consistent with absorption of the metals by sites in the biomass containing phosphate, carboxylate, and other functional groups. The uptake of the molybdate and vanadate anions was strongly pH dependent, and it is proposed that the uptake mechanism involves electrostatic attraction to positively charged functional groups.

Levy, R.V., Cheetham, R.D., Davis, J., Winer, G. and Hart, F.L. (1984), Novel method for studying the public health significance of macroinvertebrates occurring in potable water. *Applied and Environmental Microbiology*, **47** (5), 889-894.

Full Text: [A\App Env Mic47, 889.pdf](A/App%20Env%20Mic47,%20889.pdf)

Abstract: An experimental procedure was developed to study the association of selected bacteria and macroinvertebrates and their response to free available chlorine disinfection. The organisms selected for study were *Escherichia coli* (LacZ545), Enterobacter cloacae (ATCC 23355), and the amphipod Hyalella azteca. E. coli was shown to bind tightly (1.6×104, C.F., U per amphipod) to this macroinvertebrate and to resist repeated attempts to wash it off. E. cloacae was shown to bind much less tightly (1.4×103, C.F., U per amphipod) to H. azteca and was less resistant to removal by washing. The extent of association is a function of macroinvertebrate size (surface area), but the procedure produces repeatable results usable for controlled experimentation. This method, together with the dual bacterial identification criteria (morphology and antibiotic resistance), was used to study the response of unassociated and associated E. coli and E. cloacae to disinfection with free available chlorine at 1.0 mg/liter. Unassociated E. coli populations decreased to less than 1% of their zero time controls within 1 min of contact time, whereas more than 2% of the associated E. coli populations remained viable after 60 min of contact at 1.0 mg of free available chlorine per liter. Unassociated E. cloacae populations decreased to less than 1% of their zero time controls within 1 min of contact time, whereas ca. 15% of the associated E. cloacae populations remained viable after 60 min of contact at 1.0 mg of free available chlorine per liter. (ABSTRACT TRUNCATED AT 250 WORDS)

Notes: highly cited

? Simkins, S. and Alexander, M. (1984), Models for mineralization kinetics with the variables of substrate concentration and population-density. *Applied and Environmental Microbiology*, **47** (6), 1299-1306.

Full Text: [1984\App Env Mic47, 1299.pdf](1984/App%20Env%20Mic47,%201299.pdf)

Abstract: The rates of mineralization of [14C]benzoate by an induced population of Pseudomonas sp. were measured at initial substrate concentrations ranging from 10 ng/ml to 100 micrograms/ml. Plots of the radioactivity remaining in the culture were fit by nonlinear regression to six kinetic models derived from the Monod equation. These models incorporate only the variables of substrate concentration and cell density. Plots of the mineralization kinetics in cultures containing low, intermediate, and high initial substrate concentrations were well fit by first-order, integrated Monod, and logarithmic kinetics, respectively. Parameters such as maximum specific growth rate, half-saturation constant, and initial population density divided by yield agreed between cultures to within a factor of 3.4. Benzoate mineralization by microorganisms in acclimated sewage was shown to fit logistic (sigmoidal), Monod, and logarithmic kinetics when the compound was added at initial concentrations of 0.1, 1.0, and 10 micrograms/ml, respectively. The mineralization of 10 micrograms of benzoate per ml in sewage also followed logarithmic kinetics in the absence of protozoa. It is concluded that much of the diversity in shapes of mineralization curves is a result of the interactions of substrate concentration and population density. Nonlinear regression with models incorporating these variables is a valuable means for analysis of microbial mineralization kinetics.

Treen-Sears, M.E., Martin, S.M. and Volesky, B. (1984), Propagation of *Rhizopus javanicus* biosorbent. *Applied and Environmental Microbiology*, **48** (1), 137-141.

Full Text: [A\App Env Mic48, 137.pdf](A/App%20Env%20Mic48,%20137.pdf)

Abstract: After propagation of *Rhizopus javanicus* in defined media containing glucose, urea, and mineral salts in deionized distilled water, the ability of the nonliving biomass to sequester cupric ion was assayed. Growth, uptake capacity (saturation uptake at >1 mM Cu2+ concentration in solution), and biosorptive yield (biomass concentration×uptake capacity) were increased by augmentation of the growth medium with mineral salts once growth was under way. In the stationary phase, the uptake capacity of mycelia, which were normally a poor biosorbent, was improved within 4 h of trace metal addition to the growth medium. Growth of the culture was inhibited by excessive concentrations (0.04 to 40 μM) of metals in the medium in the following order: Cu > Co ≥ Ni > Mn > Mo; zinc was not inhibitory at 40 μM, and chromium was stimulatory at 0.53 μM but slightly inhibitory at higher levels. Iron and potassium phosphate stimulated growth at levels of 0.53 and 40 mM, respectively. When *R. javanicus* was propagated in a medium with a high salt concentration, exponential growth (0.23 h−1) to a biomass concentration of >3 g/liter and a biosorptive yield of >500 μmol/liter was achieved. It is evident that the powerful biosorbent characteristics of *Rhizopus* biomass led to depletion of available trace minerals in suspension culture, which in turn limited growth.

Burke, V., Robinson, J., Gracey, M., Peterson, D. and Partridge, K. (1984), Isolation of *Aeromonas hydrophila* from a metropolitan water supply: Seasonal correlation with clinical isolates. *Applied and Environmental Microbiology*, **48** (2), 361-366.

Full Text: [A\App Env Mic48, 361.pdf](A/App%20Env%20Mic48,%20361.pdf)

Abstract: The occurrence of Aeromonas spp. in the metropolitan water supply of Perth, Western Australia, Australia, was monitored at several sampling points during a period of 1 year. Water within the distribution system conformed to international standards for drinking water but contained Aeromonas spp. in numbers comparable to those in raw surface water, although this water was free of *Escherichia coli*. Coliforms and E. coli were found in raw surface waters, and Aeromonas spp. were found in raw water from surface and underground sources. Chemical treatment, followed by chlorination at service reservoirs, resulted in water free of E. coli and a decrease in the number of Aeromonas spp. Aeromonas spp. were found in the greatest numbers in summer. Multiple regression analysis showed that growth of Aeromonas spp. in chlorinated water was related to water temperature, residual chlorine, and interaction between these variables. The incidence of Aeromonas-associated gastroenteritis, determined from isolates referred to us for enterotoxin testing, paralleled the pattern of isolation of Aeromonas spp. in water within the distribution systems. We suggest that the presence of Aeromonas spp. in drinking water needs public health appraisal and that further work should be undertaken to permit reevaluation of standards for the quality of drinking water.

Goyal, S.M., Adams, W.N., OMalley, M.L. and Lear, D.W. (1984), Human pathogenic viruses at sewage sludge disposal sites in the Middle Atlantic region. *Applied and Environmental Microbiology*, **48** (4), 758-763.

Full Text: [A\App Env Mic48, 758.pdf](A/App%20Env%20Mic48,%20758.pdf)

Abstract: Human enteric viruses were detected in samples of water, crabs, and bottom sediments obtained from two sewage sludge disposal sites in the Atlantic Ocean. Viruses were isolated from sediments 17 months after the cessation of sludge dumping. These findings indicate that, under natural conditions, viruses can survive for a long period of time in the marine environment and that they may present potential public health problems to humans using these resources for food and recreation. The isolation of viruses in the absence of fecal indicator bacteria reinforces previous observations on the inadequacy of these bacteria for predicting the virological quality of water and shellfish.

Reasoner, D.J. and Geldreich, E.E. (1985), A new medium for the enumeration and subculture of bacteria from potable water. *Applied and Environmental Microbiology*, **49** (1), 1-7.

Full Text: [A\App Env Mic49, 1.pdf](A/App%20Env%20Mic49,%201.pdf)

Abstract: Plate count agar is presently the recommended medium for the standard bacterial plate count (35°C, 48-h incubation) of water and wastewater. However, plate count agar does not permit the growth of many bacteria that may be present in treated potable water supplies. A new medium was developed for use in heterotrophic plate count analyses and for subculture of bacteria isolated from potable water samples. The new medium, designated R2A, contains 0.5 g of yeast extract, 0.5 g of Difco Proteose Peptone no. 3 (Difco Laboratories), 0.5 g of Casamino Acids (Difco), 0.5 g of glucose, 0.5 g of soluble starch, 0.3 g of K2HPO4, 0.05 g of MgSO4 X 7H2O, 0.3 g of sodium pyruvate, and 15 g of agar per liter of laboratory quality water. Adjust the pH to 7.2 with crystalline K2HPO4 or KH2PO4 and sterilize at 121°C for 15 min. Results from parallel studies with spread, membrane filter, and pour plate procedures showed that R2A medium yielded significantly higher bacterial counts than did plate count agar. Studies of the effect of incubation temperature showed that the magnitude of the count was inversely proportional to the incubation temperature. Longer incubation time, up to 14 days, yielded higher counts and increased detection of pigmented bacteria. Maximal bacterial counts were obtained after incubation at 20°C for 14 days. As a tool to monitor heterotrophic bacterial populations in water treatment processes and in treated distribution water, R2A spread or membrane filter plates incubated at 28°C for 5 to 7 days is recommended. (ABSTRACT TRUNCATED AT 250 WORDS)

Notes: highly cited

? Schmidt, S.K., Simkins, S. and Alexander, M. (1985), Models for the kinetics of biodegradation of organic-compounds not supporting growth. *Applied and Environmental Microbiology*, **50** (2), 323-331.

Full Text: [1985\App Env Mic50, 323.pdf](1985/App%20Env%20Mic50,%20323.pdf)

Abstract: We developed 12 models of kinetics to describe the metabolism of organic substrates that are not supporting bacterial growth. These models can be used to describe the biodegradation of organic compounds that are not supporting growth when the responsible populations are growing logistically, logarithmically, or linearly or are not increasing in numbers. Nonlinear regression analysis was used to fit patterns of mineralization by two bacteria to these kinetic models. Pseudomonas acidovorans mineralized 1 ng of phenol per ml while growing exponentially at the expense of uncharacterized organic carbon in a synthetic medium. Phenol at a concentration of 1 ng/ml did not affect the growth of P. acidovorans. These data were best fit by the model that incorporates the equation for logarithmic growth and assumes a concentration of test substrate well below its Km value. In the absence of a second substrate, glucose at concentrations below those supporting growth was mineralized by Salmonella typhimurium in a manner best described by pseudo first-order kinetics. In the presence of different concentrations of arabinose, however, the kinetics of glucose mineralization by S. typhimurium reflected linear, logistic, or logarithmic growth of the population on arabinose. We conclude that the kinetics of mineralization of organic compounds at concentrations too low to support growth are best described either by the first-order model or by models that incorporate expressions for the kinetics of growth of the metabolizing population on other substrates. When growth is at the expense of other substrates, the kinetics observed reflect such growth, as well as the concentration of the substrate of interest.(ABSTRACT TRUNCATED AT 250 WORDS)

Finch, G.R., Stiles, M.E. and Smith, D.W. (1987), Recovery of a marker strain of *Escherichia coli* from ozonated water by membrane filtration. *Applied and Environmental Microbiology*, **53** (12), 2894-2896.

Full Text: [A\App Env Mic53, 2894.pdf](A/App%20Env%20Mic53,%202894.pdf)

Abstract: Selective and nonselective growth media were evaluated at two incubation temperatures, 35 and 44.5°C, for the recovery of a nalidixic acid-resistant marker strain of *Escherichia coli* ATCC 11775 by membrane filtration from ozonated 0.05 M phosphate buffer (pH 6.9). There were significantly fewer bacteria recovered with the standard m-FC agar when compared with the same growth medium prepared without bile salts and rosolic acid. This effect was particularly noticeable at the elevated incubation temperature of 44.5°C. These findings are contrary to previous work which concluded that the standard American Public Health Association membrane filtration procedure is suitable for recovery of fecal coliform indicator bacteria from ozonated wastewater.

Pérez-Rosas, N. and Hazen, T.C. (1988), In situ survival of *Vibrio cholerae* and *Escherichia coli* in tropical coral reefs. *Applied and Environmental Microbiology*, **54** (1), 1-9.

Full Text: [A\App Env Mic54, 1.pdf](A/App%20Env%20Mic54,%201.pdf)

Abstract: *Vibrio cholerae* and *Escherichia coli* were inoculated into membrane diffusion chambers and placed around two small coral reef islands in Puerto Rico and monitored for 5 days. Several chambers were also buried in the sands of one of the reefs. Both E. coli and *V. cholerae* densities declined by 2 orders of magnitude, as measured by direct particle counts with a Coulter Counter (Coulter Electronics, Inc., Hialeah, Fla.). However, the density of neither bacteria changed dramatically when the same samples were analyzed by epifluorescent direct counts. Differences in the two direct count methods were accounted for by changes in cell morphology that occurred in both bacteria after exposure to seawater. Morphological changes occurred more rapidly in E. coli compared with those in *V. cholerae*. Bacteria in chambers exposed to sediment did not show significant changes in morphology and had only a slight decline in density. Physiological activity declined by more than 40% for both bacteria within 24 h. The decline in activity was less severe in the sediments. Tropical coral reef sands and turtle grass beds were shown to be less stressful environments for *V. cholerae* and E. coli than would have been predicted from temperature and microcosm studies. *V. cholerae* can survive the in situ conditions of a tropical coral reef and could become a source of bacterial contamination for fish and shellfish in this environment. The simultaneous monitoring of E. coli levels established that this bacteria can not be used as an indicator of *V. cholerae* or other fecal-borne pathogens in coral reef environments because of the greater stress these environments put on E. coli. Both bacteria could be of greater public health importance in tropical marine areas than previously imagined.

Swindoll, C.M., Aelion, C.M. and Pfaender, F.K. (1988), Influence of inorganic and organic nutrients on aerobic biodegradation and on the adaptation response of subsurface microbial communities. *Applied and Environmental Microbiology*, **54** (1), 212-217.

Full Text: [A\App Env Mic54, 212.pdf](A/App%20Env%20Mic54,%20212.pdf)

Abstract: The influence of inorganic and organic amendments on the mineralization of ethylene dibromide, p-nitrophenol, phenol, and toluene was examined in subsurface soil samples from a pristine aquifer near Lula, Okla. The responses indicate that the metabolic abilities and nutrient requirements of groundwater microorganisms vary substantially within an aquifer. In some samples, additions of inorganic nutrients resulted in a more rapid adaptation to the test substrate and a higher rate of metabolism, indicating that metabolism may have been limited by these nutrients. In other samples from the same aquifer layer, inorganic amendments had little or no influence on mineralization. In general, the addition of multiple inorganic nutrients resulted in a greater enhancement of degradation than did the addition of single substances. Additions of alternate carbon sources, such as glucose or amino acids, inhibited the mineralization of the xenobiotic substrates. This inhibition appears to be the result of the preferential utilization of the more easily degradable carbon amendments.

Pöyry, T., Stenvik, M. and Hovi, T. (1988), Viruses in sewage waters during and after a poliomyelitis outbreak and subsequent nationwide oral poliovirus vaccination campaign in Finland. *Applied and Environmental Microbiology*, **54** (2), 371-374.

Full Text: [A\App Env Mic54, 371.pdf](A/App%20Env%20Mic54,%20371.pdf)

Abstract: During an outbreak of paralytic poliomyelitis in Finland in 1984 and 1985 the widespread circulation of the causative wild-type serotype 3 poliovirus in the population was documented by demonstrating the virus in sewage water specimens in 13 different locations in the greater Helsinki district and in 13 other cities or towns all over the country. After the nationwide campaign with oral poliovirus vaccine in 1985, poliovirus serotypes 2 and 3 were readily isolated from sewage waters for up to 2 months, whereas type 1 poliovirus seemed to disappear from the sewage more rapidly. All of these isolates were temperature sensitive and therefore most likely vaccine related. The efficacy of the vaccination campaign in regard to elimination of the epidemic type 3 strain was evaluated by a follow-up study on viruses in sewage waters continued for 12 months through the subsequent expected season of poliomyelitis. Several types of enteroviruses, including five vaccine-related poliovirus strains, were identified in the 72 virus-positive specimens out of 93 studied. No wild-type polioviruses were found, indicating the success of the campaign.

Notermans, S., Heuvelman, K.J. and Wernars, K. (1988), Synthetic enterotoxin B DNA probes for detection of enterotoxigenic *Staphylococcus aureus* strains. *Applied and Environmental Microbiology*, **54** (2), 531-533.

Full Text: [A\App Env Mic54, 531.pdf](A/App%20Env%20Mic54,%20531.pdf)

Abstract: DNA-DNA colony hybridization experiments with three different synthetic probes were carried out with 210 strains of *Staphylococcus aureus*. The synthetic probes encoded the amino acids 15 to 29 (probe 1), 179 to 192 (probe 2), and 207 to 219 (probe 3) of staphylococcal enterotoxin B (SEB). The amino acid sequences of these parts of SEB are identical to those of SEC1. All 21 SEB-producing strains tested reacted with each of the three probes. of the 69 SEC-producing strains, 21 reacted with probe 1, none reacted with probe 2, and all 69 reacted with probe 3. With other strains no hybridization signals were obtained. The results presented here show that with a single synthetic DNA probe (probe 3) both SEB-and SEC-producing strains are detectable.

Watkins, W.D., Rippey, S.R., Clavet, C.R., Kelley Reitz, D.J. and Burkhardt III, W. (1988), Novel compound for identifying *Escherichia coli*. *Applied and Environmental Microbiology*, **54** (7), 1874-1875.

Full Text: [A\App Env Mic54, 1874.pdf](A/App%20Env%20Mic54,%201874.pdf)

Abstract: A new chromogenic compound, 5-bromo-4-chloro-3-indoxyl-beta-D-glucuronide, was found to be useful for the rapid, specific, differential identification of *Escherichia coli* in the sanitary analysis of shellfish and wastewater. of 1, 025 presumptively positive colonies (blue) and 583 presumptively negative colonies (nonblue), only 1% false-negative and 5% false-positive results were found.

Pérez-Rosas, N. and Hazen, T.C. (1989), In situ survival of *Vibrio cholerae* and *Escherichia coli* in a tropical rain forest watershed. *Applied and Environmental Microbiology*, **55** (2), 495-499.

Full Text: [A\App Env Mic55, 495.pdf](A/App%20Env%20Mic55,%20495.pdf)

Abstract: For 12 months, *Vibrio cholerae* and fecal coliform densities were monitored along with nine other water quality parameters at 12 sites in a rain forest watershed in Puerto Rico. Densities of *V. cholerae* and fecal coliforms were not significantly correlated, even though the highest densities of both bacteria were found at a sewage outfall. High densities of *V. cholerae* were also found at pristine sites at the highest point in the watershed. The density of *Escherichia coli* and *V. cholerae* in membrane diffusion chambers did not change significantly during the course of two such studies. Physiological activity, as measured by electron transport system activity and relative nucleic acid composition, indicated that both E. coli and *V. cholerae* remained active. This study suggests that *V. cholerae* is indigenous to tropical fresh waters and that assays other than those that detect fecal coliforms or E. coli must be used for assessing public health risk in tropical waters.

Bancroft, K., Nelson, E.T. and Childers, G.W. (1989), Comparison of the presence-absence and membrane filter techniques for coliform detection in small, nonchlorinated water distribution systems. *Applied and Environmental Microbiology*, **55** (2), 507-510.

Full Text: [A\App Env Mic55, 507.pdf](A/App%20Env%20Mic55,%20507.pdf)

Abstract: The traditional membrane filter (American Public Health Association, Standard Methods for the Examination of Water and Wastewater, 16th ed., American Public Health Association, Washington, D.C., 1985) and presence-absence (P-A)(J. A. Clark, Can. J. Microbiol. 14 (13-18, 1968) techniques for the detection of coliform bacteria were compared in a small nonchlorinated drinking water distribution system by using total positive samples and frequency-of-occurrence analyses. No significant differences (P less than 0.05) were found in detection of the presence of coliform bacteria or in changes in the frequency of occurrence with time. A reduction in P-A sample volume (to 50 ml) was not found to statistically affect the comparative results of traditional membrane filter and P-A tests.

Notermans, S., Chakraborty, T., Leimeister Wächter, M., Dufrenne, J., Heuvelman, K.J., Maas, H., Jansen, W., Wernars, K. and Guinee, P. (1989), Specific gene probe for detection of biotyped and serotyped *Listeria* strains. *Applied and Environmental Microbiology*, **55** (4), 902-906.

Full Text: [A\App Env Mic55, 902.pdf](A/App%20Env%20Mic55,%20902.pdf)

Abstract: A total of 284 strains of *Listeria*, including all known serovars and biovars together with *Listeria* grayi and *Listeria* murrayi, were biotyped and serotyped. Biotyping and serotyping could be done in 2 days. A gene probe encoding a delayed hypersensitivity factor (DTH) was used in the detection of pathogenic biotypes and serotypes of the tested strains. The gene was found in all 117 tested *Listeria* monocytogenes strains of serogroups 1/2a, 1/2b, 1/2c, 3a, 3b, 3c, 4c, 4d, 4e, 4ab, and 7. It was also present in *Listeria* ivanovii. of 78 L. monocytogenes strains of serogroup 4b, 77 strains contained the gene, whereas it was absent in all 10 tested L. monocytogenes strains of serogroup 4a. Furthermore, the gene was absent in *Listeria* seeligeri, L. grayi, L. murrayi, and L. innocua of serogroups 3c, 4b, and 6a and in L. welshimeri of serogroups 1/2b, 3b, 6a, and 6b. Since L. monocytogenes and L. ivanovii are the only two biotypes of the genus *Listeria* considered pathogens, the data obtained indicate that the DNA probe tested may be a useful tool in the detection of virulent *Listeria* isolates in clinical, environmental, and food samples.

Barnes, R., Curry, J.I., Elliott, L.M., Peter, C.R., Tamplin, B.R., Wilcke, Jr., B.W. (1989), Evaluation of the 7-h membrane filter test for quantitation of fecal coliforms in water. *Applied and Environmental Microbiology*, **55** (6), 1504-1506.

Full Text: [A\App Env Mic55, 1504.pdf](A/App%20Env%20Mic55,%201504.pdf)

Abstract: The 7-h fecal coliform (FC) test for detection of FC organisms in water was evaluated to establish its validity and usefulness for emergency and disaster situations. The waters tested consisted of routine samples collected for public health surveillance and enforcement purposes. A total of 984 water samples from throughout California were assayed. These included samples from coastal salt waters, rivers, canals, and reservoirs, in addition to potable and miscellaneous freshwater sources. A portion of each sample was tested concurrently by both the 7-h FC test and the most-probable-number FC five-tube test. The 7-h FC test samples were incubated for 7 to 7.25 h at 41.5°C. Overall, greater than 90% agreement was obtained between the methods in determining whether the water quality was acceptable or unacceptable. Statistical analysis of the 984 samples confirmed that the 7-h FC method was a suitable alternative to the most-probable-number FC method for evaluation of freshwater samples. During emergencies or disasters, the 7-h FC test could provide a means for detection of fecal contamination of water with results available in less than 1 day.

Yoshpe Purer, Y. (1989), Evaluation of media for monitoring fecal streptococci in seawater. *Applied and Environmental Microbiology*, **55** (8), 2041-2045.

Full Text: [A\App Env Mic55, 2041.pdf](A/App%20Env%20Mic55,%202041.pdf)

Abstract: The selectivity of KF streptococcus agar (KF) for monitoring fecal streptococci (FS) in seawater was examined in 234 samples of Mediterranean water and compared with the selectivity of M-*Enterococcus* agar (M-Ent) for 124 samples and with bile-esculin-azide agar (BEA) for 17 samples. KF was found to be unsuitable for marine water because Vibrio alginolyticus and other gram-negative bacilli indigenous to this environment grew well on it and produced red colonies identical to those of FS. In 26% of samples, some with high counts of red colonies on the membrane filters (MF), there were no streptococci, only gram-negative bacilli and staphylococci, and in an additional 23.1% the streptococci constituted less than 50% of the “typical” red colonies on the MF. V. alginolyticus also produced FS-like colonies on MF incubated on BEA but was not isolated from MF incubated on M-Ent. Although staphylococci grew and produced FS-like colonies on all three media, M-Ent was the most selective since no gram-negative bacilli were isolated from MF incubated on it.

Struijs, J. and Rogers, J.E. (1989), Reductive dehalogenation of dichloroanilines by anaerobic microorganisms in fresh and dichlorophenol-acclimated pond sediment. *Applied and Environmental Microbiology*, **55** (10), 2527-2531.

Full Text: [A\App Env Mic55, 2527.pdf](A/App%20Env%20Mic55,%202527.pdf)

Abstract: We investigated the transformation of 2,4-dichloroaniline (2,4-diCA) and 3, 4-DiCA to monochloroanilines (CA) in anaerobic pond sediment. Dechlorination of 3, 4-DiCA to 3-CA started after a lag period of 3 weeks and was complete after an additional 5 weeks. Although 2,4-diCA disappeared over 8 weeks, the appearance of a CA product could not be detected. In contrast, anaerobic bacteria in pond sediment acclimated to dehalogenate 2,4-dichlorophenol (2,4-diCP) or 3, 4-DiCP rapidly dechlorinated 2,4-diCA and 3, 4-DiCA without any lag time. By comparison, anaerobic sediment bacteria acclimated to 3, 4-DiCA rapidly degraded 3, 4-DiCP without a lag. In all cases, the CA products were stable for the duration of the experiments. It is concluded that cross-acclimation occurred.

Walker, S.G., Flemming, C.A., Ferris, F.G., Beveridge, T.J. and Bailey, G. (1989), Physicochemical interaction of *Escherichia coli* cell envelopes and *Bacillus subtilis* cell walls with two clays and ability of the composite to immobilize heavy metals from solution. *Applied and Environmental Microbiology*, **55** (11), 2976-2984.

Full Text: [A\App Env Mic55, 2976.pdf](A/App%20Env%20Mic55,%202976.pdf)

Abstract: Isolated Escherichia coli K-12 cell envelopes or Bacillus subtilis 168 cell walls were reacted with smectite or kaolinite clay in distilled deionized water (pH 6.0); unbound envelopes or walls were separated by sucrose density gradient centrifugation, and the extent of adsorption was calculated. At saturation, both clays adsorbed approximately 1.0 mg (dry weight) of envelopes or walls per mg (dry weight) of clay. Clays showed a preference for edge-on orientation with both walls and envelopes, which was indicative of an aluminum polynuclear bridging mechanism between the wall or envelope surface and the clay edge. The addition of heavy metals increased the incidence of planar surface orientations, which suggested that multivalent metal cation bridging was coming into play and was of increasing importance. The metal-binding capacity of isolated envelopes, walls, clays, and envelope-clay or wall-clay mixtures was determined by atomic absorption spectroscopy after exposure to aqueous 5.0 mM Ag+, Cu2+, Cd2+, Ni2+, Pb2+, Zn2+, and Cr3+ nitrate salt solutions at pHs determined by the buffering capacity of wall, envelope, clay, or composite system. The order of metal uptake was walls greater than envelopes greater than smectite clay greater than kaolinite clay for the individual components, and walls plus smectite greater than walls plus kaolinite greater than envelopes plus smectite greater than envelopes plus kaolinite for the mixtures. On a dry-weight basis, the envelope-clay and wall-clay mixtures bound 20 to 90% less metal than equal amounts of the individual components did.(ABSTRACT TRUNCATED AT 250 WORDS)

Notes: highly cited

Mullen, M.D., Wolf, D.C., Ferris, F.G., Beveridge, T.J., Flemming, C.A. and Bailey, G.W. (1989), Bacterial sorption of heavy metals. *Applied and Environmental Microbiology*, **55** (12), 3143-3149.

Full Text: [A\App Env Mic55, 3143.pdf](A/App%20Env%20Mic55,%203143.pdf)

Abstract: Four bacteria, Bacillus cereus, B. subtilis, Escherichia coli, and Pseudomonas aeruginosa, were examined for the ability to remove Ag+, Cd2+, Cu2+, and La3+ from solution by batch equilibration methods. Cd and Cu sorption over the concentration range 0.001 to 1 mM was described by Freundlich isotherms. At 1 mM concentrations of both Cd2+ and Cu2+, P. aeruginosa and B. cereus were the most and least efficient at metal removal, respectively. Freundlich K constants indicated that E. coli was most efficient at Cd2+ removal and B. subtilis removed the most Cu2+. Removal of Ag+ from solution by bacteria was very efficient; an average of 89% of the total Ag+ was removed from the 1 mM solution, while only 12, 29, and 27% of the total Cd2+, Cu2+, and La3+, respectively, were sorbed from 1 mM solutions. Electron microscopy indicated that La3+ accumulated at the cell surface as needlelike, crystalline precipitates. Silver precipitated as discrete colloidal aggregates at the cell surface and occasionally in the cytoplasm. Neither Cd2+ nor Cu2+ provided enough electron scattering to identify the location of sorption. The affinity series for bacterial removal of these metals decreased in the order Ag greater than La greater than Cu greater than Cd. The results indicate that bacterial cells are capable of binding large quantities of different metals. Adsorption equations may be useful for describing bacterium-metal interactions with metals such as Cd and Cu; however, this approach may not be adequate when precipitation of metals occurs.

Harwood-Sears, V. and Gordon, A.S. (1990), Copper-induced production of copper-binding supernatant proteins by the marine bacterium vibrio alginolyticus. *Applied and Environmental Microbiology*, **56**, 1327-1332.

Full Text: [A\App Env Mic56, 1327.pdf](A/App%20Env%20Mic56,%201327.pdf)

Abstract: Growth of the marine bacterium Vibrio alginolyticus is temporarily inhibited by micromolar levels of copper. During the copper-induced lag phase, supernatant compounds which complex and detoxify copper are produced. In this study two copper-inducible supernatant proteins having molecular masses of ca. 21 and 19 kilodaltons (CuBP1 and CuBP2) were identified; these proteins were, respectively, 25 and 46 times amplified in supernatants of copper-challenged cultures compared with controls. Experiments in which chloramphenicol was added to cultures indicated that there was de novo synthesis of these proteins in response to copper. When supernatants were separated by gel permeation chromatography, CuBP1 and CuBP2 coeluted with a copper-induced peak in copper-binding activity. CuBP1 and CuBP2 from whole supernatants were concentrated and partially purified by using a copper-charged immobilized metal ion affinity chromatography column, confirming the affinity of these proteins for copper. A comparison of cell pellets and supernatants demonstrated that CuBP1 was more concentrated in supernatants than in cells. Our data are consistent with a model for a novel mechanism of copper detoxification in which excretion of copper-binding protein is induced by copper.

Nishikawa, Y., Hase, A., Ishii, E. and Kishi, T. (1990), Screening of aquatic samples for *Vibrio cholerae* serotype O1 by a dot-blot method and a latex agglutination test. *Applied and Environmental Microbiology*, **56** (6), 1547-1550.

Full Text: [A\App Env Mic56, 1547.pdf](A/App%20Env%20Mic56,%201547.pdf)

Abstract: A dot-blot, enzyme-linked immunosorbent method and a latex agglutination test were studied for their abilities to detect *Vibrio cholerae* serotype O1 in aquatic samples by testing artificially contaminated water as well as samples from natural potential sources. Water samples were preenriched with alkaline peptone and then enriched with Monsur peptone water. For the dot-blot test, enriched cultures of organisms in a small portion of the Monsur peptone water were transferred to a polyvinylidene difluoride membrane with a microfiltration apparatus. The enzyme-linked immunosorbent assay was performed by using biotin-labeled antibodies and avidin-biotin-peroxidase complex; brown dots developed in the wells that contained serotype O1 vibrios. Latex agglutination tests were performed by mixing 1 drop of the culture in Monsur with 1 drop of reagent coated with monoclonal antibody specific for antigen A. The sensitivities and specificities of the methods were compared with those of the colony-blot method, which identified individual colonies of *V. cholerae* O1 in mixed bacterial cultures on isolation media. Our results indicate that the dot-blot method is as sensitive as the colony-blot method and is useful for screening for *V. cholerae* serotype O1 even in specimens that are heavily contaminated with non-O1 vibrios.

Stewart, M.C., Wolfe, R.L. and Means, E.G. (1990), Assessment of the bacteriological activity associated with granular activated carbon treatment of drinking water. *Applied and Environmental Microbiology*, **56** (12), 3822-3829.

Full Text: [A\App Env Mic56, 3822.pdf](A/App%20Env%20Mic56,%203822.pdf)

Abstract: Bacteriological analyses were performed on the effluent from a conventional water treatment pilot plant in which granular activated carbon (GAC) had been used as the final process to assess the impact of GAC on the microbial quality of the water produced. Samples were collected twice weekly for 160 days from the effluents of six GAC columns, each of which used one of four different empty-bed contact times (7.5, 15, 30, and 60 min). The samples were analyzed for heterotrophic plate counts and total coliforms. Effluent samples were also exposed to chloramines and free chlorine for 60 min (pH 8.2, 23°C). Bacterial identifications were performed on the disinfected and nondisinfected effluents. Additional studies were conducted to assess the bacteriological activity associated with released GAC particles. The results indicated that heterotrophic plate counts in the effluents from all columns increased to 10(5) CFU/ml within 5 days and subsequently stabilized at 10(4) CFU/ml. The heterotrophic plate counts did not differ at different empty-bed contact times. Coliforms (identified as Enterobacter spp.) were recovered from the nondisinfected effluent on only two occasions. The disinfection results indicated that 1.5 mg of chloramines per liter inactivated approximately 50% more bacteria than did 1.0 mg of free chlorine per liter after 1 h of contact time. Chloramines and chlorine selected for the development of different bacterial species--Pseudomonas spp. and Flavobacterium spp., respectively.(ABSTRACT TRUNCATED AT 250 WORDS)

Payment, P., Franco, E., Richardson, L. and Siemiatycki, J. (1991), Gastrointestinal health effects associated with the consumption of drinking water produced by point-of-use domestic reverse-osmosis filtration units. *Applied and Environmental Microbiology*, **57** (4), 945-948.

Full Text: [A\App Env Mic57, 945.pdf](A/App%20Env%20Mic57,%20945.pdf)

Abstract: During a prospective epidemiological study of gastrointestinal health effects associated with the consumption of drinking water produced by reverse-osmosis domestic units, a correlation was demonstrated between the bacterial counts on R2A medium incubated at 35°C and the reported gastrointestinal symptoms in families who used these units. A univariate correlation was found with bacterial counts on R2A medium at 20°C but was confounded by the bacterial counts at 35°C. Other variables, such as family size and amount of water consumed, were not independently explanatory of the rate of illness. These observations raise concerns for the possibility of increased disease associated with certain point-of-use treatment devices for domestic use when high levels of bacterial growth occur.

Alary, M. and Joly, J.R. (1991), Risk-factors for contamination of domestic hot water systems by *Legionella*e. *Applied and Environmental Microbiology*, **57** (8), 2360-2367.

Full Text: [A\App Env Mic57, 2360.pdf](A/App%20Env%20Mic57,%202360.pdf)

Abstract: To assess risk factors associated with the contamination of the domestic environment by *Legionella*e, 211 houses in the Quebec City area were randomly selected and water samples were collected from the hot water tank, the shower heads, and the most frequently used faucet. After centrifugation, concentrated samples were seeded in triplicate on BCYE and GPV media. Data on the characteristics of the hot water system and plumbing in the house and on the personal habits of the occupants were collected for each house. Among these 211 houses, hot water was provided by either an oil or gas heater in 33 and by an electric heater in 178. *Legionella*e were isolated from none of the samples from houses with oil or gas heaters and from 39% (69 of 178) of those with electric water heaters (P < 0.0001). This association remained highly significant after control for water temperature and other variables in a stratified analysis. In the 178 houses with an electric heater, 12% of the faucets, 15% of the shower heads, and 37% of the water heaters were contaminated. *Legionella* *Pneumophila* serogroups 2 and 4 were the most frequently isolated strains. Logistic regression showed that factors associated with electric water heater contamination were (i) location of the house in older districts of the city (P < 0.0001), (II) old age of the water heater (P = 0.003), and (III) low water temperature (P = 0.05). Contamination of the water heater was the only factor significantly associated with the contamination of peripheral outlets (P < 0.0001). This study shows that the presence of an electric heater is strongly associated with contamination of domestic hot water systems by *Legionella*e. The public health importance of this contamination is still unknown.

Michel, F.C., Dass, S.B., Grulke, E.A. and Reddy, C.A. (1991), Role of manganese peroxidases and lignin peroxidases of *Phanerochaete chrysosporium* in the decolorization of kraft bleach plant effluent. *Applied and Environmental Microbiology*, **57** (8), 2368-2375.

Full Text: [A\App Env Mic57, 2368.pdf](A/App%20Env%20Mic57,%202368.pdf)

Abstract: The role of lignin peroxidases (LIPs) and manganese peroxidases (MNPs) of Phanerochaete chrysosporium in decolorizing kraft bleach plant effluent (BPE) was investigated. Negligible BPE decolorization was exhibited by a per mutant, which lacks the ability to produce both the LIPs and the MNPs. Also, little decolorization was seen when the wild type was grown in high-nitrogen medium, in which the production of LIPs and MNPs is blocked. A lip mutant of P. chrysosporium, which produces MNPs but not LIPs, showed about 80% of the activity exhibited by the wild type, indicating that the MNPs play an important role in BPE decolorization. When P. chrysosporium was grown in a medium with 100 ppm of Mn(II), high levels of MNPs but no LIPs were produced, and this culture also exhibited high rates of BPE decolorization, lending further support to the idea that MNPs play a key role in BPE decolorization. When P. chrysosporium was grown in a medium with no Mn(II), high levels of LIPs but negligible levels of MNPs were produced and the rate and extent of BPE decolorization by such cultures were quite low, indicating that LIPs play a relatively minor role in BPE decolorization. Furthermore, high rates of BPE decolorization were seen on days 3 and 4 of incubation, when the cultures exhibit high levels of MNP activity but little or no LIP activity. These results indicate that MNPs plays a relatively more important role than LIPs in BPE decolorization by P. chrysosporium.

Keywords: White-Rot Fungi, Cultures, Degradation, Removal, Color

LeChevallier, M.W., Norton, W.D. and Lee, R.G. (1991), *Giardia* and *Cryptosporidium* spp in filtered drinking-water supplies. *Applied and Environmental Microbiology*, **57** (9), 2617-2621.

Full Text: [A\App Env Mic57, 2617.pdf](A/App%20Env%20Mic57,%202617.pdf)

Abstract: *Giardia* and *Cryptosporidium* levels were determined by using a combined immunofluorescence test for filtered drinking water samples collected from 66 surface water treatment plants in 14 states and 1 Canadian province. *Giardia* cysts were detected in 17% of the 83 filtered water effluents. *Cryptosporidium* oocysts, were observed in 27% of the drinking water samples. Overall, cysts or oocysts were found in 39% of the treated effluent samples. Despite the frequent detection of parasites in drinking water, microscopic observations of the cysts and oocysts suggested that most of the organisms were nonviable. Compliance with the filtration criteria outlined by the Surface Water Treatment Rule of the U.S. Environmental Protection Agency did not ensure that treated water was free of cysts and oocysts. The average plant effluent turbidity for sites which were parasite positive was 0.19 nephelometric turbidity units. of sites that were positive for *Giardia* or *Cryptosporidium* spp., 78% would have been able to meet the turbidity regulations of the Surface Water Temperature Rule. Evaluation of the data by using a risk assessment model developed for *Giardia* spp. showed that 24% of the utilities examined would not meet a 1/10,000 annual risk of *Giardia* infection. For cold water conditions (0.5°C), 46% of the plants would not achieve the 1/10,000 risk level.

Keywords: Outbreak, Contamination

Zhou, Y.J., Estes, M.K., Jiang, X. and Metcalf, T.G. (1991), Concentration and detection of hepatitis a virus and rotavirus from shellfish by hybridization tests. *Applied and Environmental Microbiology*, **57** (10), 2963-2968.

Full Text: [A\App Env Mic57, 2963.pdf](A/App%20Env%20Mic57,%202963.pdf)

Abstract: A modified polyethylene glycol precipitation method for concentration of virus followed by a new method to recover nucleic acid was used to detect hepatitis A virus (HAV) and rotavirus (SA11) in shellfish (oysters and hard-shell clams) by hybridization tests. Infectious virus, seeded into relatively large quantities of shellfish, was recovered consistently, with greater than 90% efficiency as measured by either in situ hybridization (HAV) or plaque assay (rotavirus SA11). Viral nucleic acid for dot blot hybridization assays was extracted and purified from virus-containing polyethylene glycol concentrates. Separation of shellfish polysaccharides from nucleic acid was necessary before viral RNA could be detected by dot blot hybridization. Removal of shellfish polysaccharides was accomplished by using the cationic detergent cetyltrimethylammonium bromide (CTAB). Use of CTAB reduced background interference with hybridization signals, which resulted in increased hybridization test sensitivity. After polysaccharide removal, dot blot hybridization assays could detect approximately 106 physical particles (corresponding to approximately 103 infectious particles) of HAV and 104 PFU of SA11 rotavirus present in 20-g samples of oyster and clam meats. These studies show continuing promise for the development of uniform methods to directly detect human viral pathogens in different types of shellfish. However, practical applications of such methods to detect noncultivatable human viral pathogens of public health interest will require additional improvements in test sensitivity.

Labatiuk, C.W., Schaefer, F.W., Finch, G.R. and Belosevic, M. (1991), Comparison of animal infectivity, excystation, and fluorogenic dye as measures of *Giardia muris* cyst inactivation by ozone. *Applied and Environmental Microbiology*, **57** (11), 3187-3192.

Full Text: [A\App Env Mic57, 3187.pdf](A/App%20Env%20Mic57,%203187.pdf)

Abstract: Giardia muris cyst viability after ozonation was compared by using fluorescein diacetate-ethidium bromide staining, the C3H/HeN mouse-G. muris model, and in vitro excystation. Bench-scale batch experiments were conducted under laboratory conditions (pH 6.7, 22-degrees-C) in ozone-demand-free phosphate buffer. There was a significant difference between fluorogenic staining and infectivity (P less-than-or-equal-to 0.05), with fluorogenic staining overestimating viability compared with infectivity estimates of viability. This suggests that viable cysts as indicated by fluorogenic dyes may not be able to complete the life cycle and produce an infection. No significant differences between infectivity and excystation and between fluorogenic staining and excystation (P less-than-or-equal-to 0.05) were detected for inactivations up to 99.9%. Only animal infectivity had the sensitivity to detect inactivations greater than 99.9%. Therefore, the animal model is the best method currently available for detecting high levels of G. muris cyst inactivation.

Keywords: Fluorescein Diacetate, Propidium Iodide, Invitro Excystation, Viability, Water, Mouse, Model

Mauchline, W.S. and Keevil, C.W. (1991), Development of the biolog substrate utilization system for identification of *Legionella* spp. *Applied and Environmental Microbiology*, **57** (11), 3345-3349.

Full Text: [A\App Env Mic57, 3345.pdf](A/App%20Env%20Mic57,%203345.pdf)

Abstract: The genus *Legionella* consists of 51 serogroups comprising 34 species. Biochemical reactions and cell wall fatty acid and quinone analyses may confirm that an isolate is a *Legionella* sp. and indicate to which species it belongs, but DNA hybridization studies have been necessary for a definitive identification. Recently, the commercially available BIOLOG identification system has offered a standardized, easily reproducible system of substrate metabolism by bacteria resuspended in multiwell plates. A tetrazolium dye acts as an electron acceptor during the oxidation of the wide range of substrates and forms an irreversible, highly colored formazan when reduced. The 95 substrate wells are read rapidly with a conventional plate reader, and the results are downloaded for comparison with a computer data base, allowing quick identification. The BIOLOG system’s ability to test more diverse classes of substrates, including amino acids, peptides, carboxylic acids, and carbohydrates, was used in this study to establish a new data base and identify the asaccharolytic *Legionella* spp. In particular, *Legionella* *Pneumophila* behaved as a microaerophile, and the fastest, most diverse metabolic activities occurred after the development of a low-oxygen incubation environment. Alternatively, bacteria could be successfully incubated in air when their concentration was double that recommended by the manufacturer. Similar results were obtained by using either Page’s amoebal saline or distilled water as the resuspending and incubation medium. Type strains did not cross-identify with any of the strains already in the manufacturer’s data base. The results indicate that this modified system has value in being able to identify *Legionella* isolates to the species level.

Tubbing, D.M. and Admiraal, W. (1991), Inhibition of bacterial and phytoplanktonic metabolic activity in the lower River Rhine by ditallowdimethylammonium chloride. *Applied and Environmental Microbiology*, **57** (12), 3616-3622.

Full Text: [A\App Env Mic57, 3616.pdf](A/App%20Env%20Mic57,%203616.pdf)

Abstract: The effects of a quaternary ammonium compound, ditallowdimethylammonium chloride (DTDMAC), on natural populations of bacteria and phytoplankton from the lower River Rhine were examined to estimate their sensitivity to the discharges of cationic surfactants in the river basin. In short-term experiments, significant decreases in the growth rate of bacterioplankton and in the photosynthetic rate of phytoplankton were observed at a nominal concentration of 0.03 to 0.1 mg of DTDMAC liter-1. Nitrification was measured with an ion-selective electrode and by the rate of acid production in ammonium-spiked river water and was found to be only sensitive to the addition of concentrations higher than 1 mg of DTDMAC liter-1. This does not support an earlier suggestion that ammonium-oxidizing bacteria are specifically sensitive to quaternary ammonium compounds. The effect of DTDMAC on thymidine incorporation was shown to depend strongly on the concentration of suspended material, which varied with the sampling date. This effect was also quantified in experimental manipulations with Rhine water. Calculations on the partitioning of DTDMAC between water and suspended matter confirmed the role of suspended solids and showed that an increase of the dissolved DTDMAC concentration in Rhine water by circa 0.01 mg liter-1 leads to a slight inhibition of the growth of heterotrophic bacteria. It is concluded that a total concentration of circa 0.01 mg of DTDMAC liter-1 measured in the River Rhine is likely to have biological consequences.

Su, H.J., Rotnitzky, A., Burge, H.A. and Spengler, J.D. (1992), Examination of fungi in domestic interiors by using factor analysis: Correlations and associations with home factors. *Applied and Environmental Microbiology*, **58** (1), 181-186.

Full Text: [A\App Env Mic58, 181.pdf](A/App%20Env%20Mic58,%20181.pdf)

Abstract: Factor analysis was utilized to investigate correlations among airborne microorganisms collected with Andersen samplers from homes in Topeka, Kans., during the winter of 1987 to 1988. The factors derived were used to relate microbial concentrations with categorical, questionnaire-derived descriptions of housing conditions. This approach successfully identified groups of common aboveground decay fungi including Cladosporium, Alternaria, Epicoccum, and Aureobasidium spp. The common soil fungi *Aspergillus* and *Penicillium* spp. were also separated as a group. These previously known ecological groupings were confirmed with air sampling data by a quantitative evaluation technique. The aboveground decay fungi sampled indoors in winter were present at relatively high concentrations in homes with gas stoves for cooking, suggesting a possible association between these fungi and increased humidity from the combustion process. Elevated concentrations of the soil fungi were significantly (P = 0.05) associated with the dirt floor, crawl-space type of basement. Elevated concentrations of water-requiring fungi, such as Fusarium spp., were shown to be associated with water collection in domestic interiors. Also, elevated mean concentrations for the group of fungi including Cladosporium, Epicoccum, Aureobasidium, and yeast spp. were found to be associated (P = 0.03) with symptoms reported on a health questionnaire. This finding was consistent with our previous study of associations between respiratory health and airborne microorganisms by univariate logistic regression analysis.

Lovley, D.R. and Phillips, E.J.P. (1992), Reduction of uranium by *Desulfovibrio desulfuricans*. *Applied and Environmental Microbiology*, **58** (3), 850-856.

Full Text: [A\App Env Mic58, 850.pdf](A/App%20Env%20Mic58,%20850.pdf)

Abstract: The possibility that sulfate-reducing microorganisms contribute to U(VI) reduction in sedimentary environments was investigated. U(VI) was reduced to U(IV) when washed cells of sulfate-grown Desulfovibrio desulfuricans were suspended in a bicarbonate buffer with lactate or H2 as the electron donor. There was no U(VI) reduction in the absence of an electron donor or when the cells were killed by heat prior to the incubation. The rates of U(VI) reduction were comparable to those in respiratory Fe(III)-reducing microorganisms. Azide or prior exposure of the cells to air did not affect the ability of D. desulfuricans to reduce U(VI). Attempts to grow D. desulfuricans with U(VI) as the electron acceptor were unsuccessful. U(VI) reduction resulted in the extracellular precipitation of the U(IV) mineral uraninite. The presence of sulfate had no effect on the rate of U(VI) reduction. Sulfate and U(VI) were reduced simultaneously. Enzymatic reduction of U(VI) by D. desulfuricans was much faster than nonenzymatic reduction of U(VI) by sulfide, even when cells of D. desulfuricans were added to provide a potential catalytic surface for the nonenzymatic reaction. The results indicate that enzymatic U(VI) reduction by sulfate-reducing microorganisms may be responsible for the accumulation of U(IV) in sulfidogenic environments. Furthermore, since the reduction of U(VI) to U(IV) precipitates uranium from solution, D. desulfuricans might be a useful organism for recovering uranium from contaminated waters and waste streams.

Keywords: Sulfate-Reducing Bacteria, Dissimilatory Reduction, Sediments, Iron, Deposition, Manganese, Thorium

Fujikawa, H., Ushioda, H. and Kudo, Y. (1992), Kinetics of *Escherichia coli* destruction by microwave irradiation. *Applied and Environmental Microbiology*, **58** (3), 920-924.

Full Text: [A\App Env Mic58, 920.pdf](A/App%20Env%20Mic58,%20920.pdf)

Abstract: The kinetics of destruction of *Escherichia coli* cells suspended in a solution by microwave irradiation with a microwave oven were studied. During radiation at several powers, the temperature of 0.01 M phosphate buffer (PB), pH 7.0, in a glass beaker increased linearly at a rate of A (degrees Centigrade per second) according to the exposure time. When E. coli cells suspended in PB were exposed in the same beaker, the number of viable cells decreased according to the exposure time and the power used. The survival curve was approximated to a set of three linear parts. For each part, a rate constant of destruction (k) and an extrapolated starting temperature (T0) at several powers were estimated. Thereafter, the relationships between A and k and between A and T0 were studied. When a flat petri dish was used, the A value of exposed PB was lower and bacterial destruction was inhibited; the survival curve was similar to a curve predicted from the A value by using the relationships between the parameters. As the concentration of salt in the solution increased (from 0 to 1.35 M), the A value decreased and bacterial destruction was more suppressed. No remarkable difference between the destruction profiles for microwave exposure and conventional heating, which had the potential to generate an equal A value, was detected. These results showed that the parameter A of an irradiated solution is essential when kinetics of bacterial destruction by microwave exposure are studied and that the destruction profile can be interpreted mostly by means of thermal effects.

Notes: highly cited

? Guerin, W.F. and Boyd, S.A. (1992), Differential bioavailability of soil-sorbed naphthalene to two bacterial species. *Applied and Environmental Microbiology*, **58** (4), 1142-1152.

Full Text: [1992\App Env Mic58, 1142.pdf](1992/App%20Env%20Mic58,%201142.pdf)

Abstract: Prediction of the fate of hydrophobic organic contaminants in soils is complicated by the competing processes of sorption and biodegradation. To test the hypothesis that sorbed naphthalene is unavailable to degradative microorganisms, we developed a simple kinetic method to examine the rates and extents of naphthalene degradation in soil-free and soil-containing systems in a comparison of two bacterial species. The method is predicated on the first-order dependence of the initial mineralization rate on the naphthalene concentration when the latter is below the Michaelis-Menten half-saturation constant (K(m)) for naphthalene for the organism under study. Rates and extents of mineralization were estimated by nonlinear regression analysis of data by using both a simple first-order model and a three-parameter, coupled degradation-desorption model described for the first time here. Bioavailability assays with two bacterial species (Pseudomonas putida ATCC 17484 and a gram-negative soil isolate, designated NP-Alk) gave dramatically different results. For NP-Alk, sorption limited both the rate and extent of naphthalene mineralization, in accordance with values predicted on the basis of the equilibrium aqueous-phase naphthalene concentrations. For strain 17484, both the rates and extents of naphthalene mineralization exceeded the predicted values and resulted in enhanced rates of naphthalene desorption from the soils. We conclude that there are important organism-specific properties which make generalizations regarding the bioavailability of sorbed substrates inappropriate.

Keywords: Polycyclic Aromatic-Hydrocarbons, Organic-Compounds, Degradation, Water, Biodegradation, Mineralization, Pseudomonads, Phenanthrene, Sediments, Sorption

Collins, Y.E. and Stotzky, G. (1992), Heavy metals alter the electrokinetic properties of bacteria, yeasts, and clay minerals. *Applied and Environmental Microbiology*, **58** (5), 1592-1600.

Full Text: [A\App Env Mic58, 1592.pdf](A/App%20Env%20Mic58,%201592.pdf)

Abstract: The electrokinetic patterns of four bacterial species (Bacillus subtilis, Bacillus megaterium, *Pseudomonas* aeruginosa, and Agrobacterium radiobacter), two yeasts (Saccharomyces cerevisiae and Candida albicans), and two clay minerals (montmorillonite and kaolinite) in the presence of the chloride salts of the heavy metals, Cd, Cr, Cu, Hg, Ni, Pb, and Zn, and of Na and Mg were determined by microelectrophoresis. The cells and kaolinite were net negatively charged at pH values above their isoelectric points (pI) in the presence of Na, Mg, Hg, and Pb at an ionic strength (mu) of 3×10-4; montmorillonite has no pl and was net negatively charged at all pH values in the presence of these metals. However, the charge of some bacteria, S. cerevisiae, and kaolinite changed to a net positive charge (charge reversal) in the presence of Cd, Cr, Cu, Ni, and Zn at pH values above 5.0 (the pH at which charge reversal occurred differed with the metal) and then, at higher pH values, again became negative. The charge of the bacteria and S. cerevisiae also reversed in solutions of Cu and Ni with a μ of > 3×10-4, whereas there was no reversal in solutions with a μ of < 3×10-4. The clays became net positively charged when the μ of Cu was > 3×10-4 and that of Ni was > 1.5×10-4. The charge of the cells and clays also reversed in solutions containing both Mg and Ni or both Cu and Ni (except montmorillonite) but not in solutions containing both Mg and Cu (except kaolinite) (μ = 3×10-4). The pls of the cells in the presence of the heavy metals were at either higher or lower pH values than in the presence of Na and Mg. Exposure of the cells to the various metals at pH values from 2 to 9 for the short times (ca. 10 min) required to measure the electrophoretic mobility did not affect their viability. The specific adsorption on the cells and clays of the hydrolyzed species of some of the heavy metals that formed at higher pH values was probably responsible for the charge reversal. These results suggest that the toxicity of some heavy metals to microorganisms varies with pH because the hydrolyzed speciation forms of these metals, which occur at higher pH values, bind on the cell surface and after the net charge of the cell. This change in charge could affect various physiological functions of the cell, as well as its interactions with other cells and inanimate particulates in the environment.

Keywords: Mediated Ecologic Processes, Environmental-Factors, Ion Toxicity, Microorganisms, Softness, Cells

van de Giessen, A., Mazurier, S.I., Jacobs Reitsma, W., Jansen, W., Berkers, P., Ritmeester, W. and Wernars, K. (1992), Study on the epidemiology and control of *Campylobacter* *jejuni* in poultry broiler flocks. *Applied and Environmental Microbiology*, **58** (6), 1913-1917.

Full Text: [A\App Env Mic58, 1913.pdf](A/App%20Env%20Mic58,%201913.pdf)

Abstract: Broiler flocks are frequently infected with *Campylobacter* jejuni. The origin of the infection is still unclear. The question of whether colonization of flocks results from transmission of C. jejuni from breeder flocks to progeny (vertical transmission) or from environmental sources (horizontal transmission) remains to be answered. Therefore, in this study samples were taken from successive broiler flocks in two broiler houses (house A on farm A and house B1 on farm B) as well as from the environment of the houses. All C. jejuni isolates were typed by using the Penner serotyping system, and part of the isolates from farm B were typed by using a randomly amplified polymorphic DNA-typing system. In poultry house A, C. jejuni was isolated from the first flock but not from subsequent flocks. In poultry house B1, C. jejuni strains of the same Penner serotypes and exhibiting identical DNA profiles were isolated from successive flocks. Infection of the flocks from a common source via horizontal pathways is suspected, while a vertical route of infection is not likely to exist. Application of measures to control horizontal transmission of C. jejuni on farm B was successful.

? Lindqvist, R. and Enfield, C.G. (1992), Biosorption of dichlorodiphenyltrichloroethane and hexachlorobenzene in groundwater and its implications for facilitated transport. *Applied and Environmental Microbiology*, **58** (7), 2211-2218.

Full Text: [1992\App Env Mic58, 2211.pdf](1992/App%20Env%20Mic58,%202211.pdf)

Abstract: The potential for enhanced mobility of hydrophobic pollutants by cotransport with bacteria in saturated soils was evaluated from measurements of biosorption of C-14-labeled hexachlorobenzene and dichlorodiphenyltrichloroethane (DDT) to five strains of soil and sewage bacteria. The sorption process could be described by a linear partition equation and appeared to be reversible, but desorption kinetics were slow and/or partly irreversible. The DDT partition coefficients varied with equilibration time, possibly reflecting DDT-induced changes in the physiology of the bacteria. The partition coefficients, normalized to the masses of the bacteria, ranged from 250 to 14,000 for live cells, but the largest coefficients were associated with autoclaved cells of a Pseudomonas sp. The sorptive capacity of the bacterial biomass was greater for DDT than for hexachlorobenzene but was not correlated to overall bacterial hydrophobicity, measured by hydrophobic interaction chromatography. In a column study, 1.2×109 cells of a Bacillus sp. strain per ml enhanced DDT transport about 8-fold, whereas an advective-dispersive-sorptive equilibrium model for two mobile phases, water and free-living bacteria, suggested a 14-fold enhancement, based on the DDT partition coefficient. The disagreement was in part due to a retarded nonequilibrium movement of the bacteria. Model calculations based on literature data covering a wide range of organisms and compounds suggested that 106 cells ml-1 would increase the mobility of very hydrophobic compounds (log octanol-water partition coefficient [K(ow) of greater-than-or-equal-to 6], whereas higher densities of bacteria (108 cells ml-1) would have a significant impact on compounds with a log K(ow) of greater-than-or-equal-to 4. These conditions may be at hand during bioremediation procedures involving either stimulation of the indigenous bacteria or introduction of specific bacteria into soil.

Keywords: Chemical-Transport, Sorption, Bacteria, Systems, Bioconcentration, Microorganisms, Accumulation, Biomass, Soils, Macromolecules

Barker, J., Brown, M.R., Collier, P.J., Farrell, I. and Gilbert, P. (1992), Relationship between *Legionella* *Pneumophila* and *Acanthamoeba polyphaga*: Physiological status and susceptibility to chemical inactivation [published erratum appears in *Applied and Environmental Microbiology* 1992, 58 (12), 4089]. *Applied and Environmental Microbiology*, **58** (8), 2420-2425.

Full Text: [A\App Env Mic58, 2420.pdf](A/App%20Env%20Mic58,%202420.pdf)

Abstract: Survival studies were conducted on *Legionella* *Pneumophila* cells that had been grown intracellularly in Acanthamoeba polyphaga and then exposed to polyhexamethylene biguanide (PHMB), benzisothiazolone (BIT), and 5-chloro-N-methylisothiazolone (CMIT). Susceptibilities were also determined for L. *Pneumophila* grown under iron-sufficient and iron-depleted conditions. BIT was relatively ineffective against cells grown under iron depletion; in contrast, iron-depleted conditions increased the susceptibilities of cells to PHMB and CMIT. The activities of all three biocides were greatly reduced against L. *Pneumophila* grown in amoebae. PHMB (1×MIC) gave 99.99% reductions in viability for cultures grown in broth within 6 h and no detectable survivors at 24 h but only 90 and 99.9% killing at 6 h and 24 h, respectively, for cells grown in amoebae. The antimicrobial properties of the three biocides against A. polyphaga were also determined. The majority of amoebae recovered from BIT treatment, but few, if any, survived CMIT treatment or exposure to PHMB. This study not only shows the profound effect that intra-amoebal growth has on the physiological status and antimicrobial susceptibility of L. *Pneumophila* but also reveals PHMB to be a potential biocide for effective water treatment. In this respect, PHMB has significant activity, below its recommended use concentrations, against both the host amoeba and L. *Pneumophila*.

Spadaro, J.T., Gold, M.H. and Renganathan, V. (1992), Degradation of azo dyes by the lignin-degrading fungus *Phanerochaete chrysosporium*. *Applied and Environmental Microbiology*, **58** (8), 2397-2401.

Full Text: [A\App Env Mic58, 2397.pdf](A/App%20Env%20Mic58,%202397.pdf)

Abstract: Under nitrogen-limiting, secondary metabolic conditions, the white rot basidiomycete Phanerochaete chrysosporium extensively mineralized the specifically C-14-ring-labeled azo dyes 4-phenylazophenol, 4-phenylazo-2-methoxyphenol, Disperse Yellow 3 [2-(4’-acetamidophenylazo)-4-methylphenol], 4-phenylazoaniline, N, N-dimethyl-4-phenylazoaniline, Disperse Orange 3 [4-(4’-nitrophenylazo)-aniline], and Solvent Yellow 14 (1-phenylazo-2-naphthol). Twelve days after addition to cultures, the dyes had been mineralized 23.1 to 48.1%. Aromatic rings with substituents such as hydroxyl, amino, acetamido, or nitro functions were mineralized to a greater extent than unsubstituted rings. Most of the dyes were degraded extensively only under nitrogen-limiting, ligninolytic conditions. However, 4-phenylazo-[U-C-14]phenol and 4-phenylazo-[U-C-14]2-methoxyphenol were mineralized to a lesser extent under nitrogen-sufficient, nonligninolytic conditions as well. These results suggest that P. chrysosporium has potential applications for the cleanup of textile mill effluents and for the bioremediation of dye-contaminated soil.

Keywords: White Rot Fungus, Environmental-Pollutants, Microbial-Degradation, Orange-II, Biodegradation, Azoreductase, Involvement, System

Fukushima, H. (1992), Direct isolation of *Yersinia pseudotuberculosis* from fresh water in Japan. *Applied and Environmental Microbiology*, **58** (8), 2688-2690.

Full Text: [A\App Env Mic58, 2688.pdf](A/App%20Env%20Mic58,%202688.pdf)

Abstract: Yersinia pseudotuberculosis was recovered from KOH-treated precipitates of 20.6% of 500 freshwater samples. KOH treatment of precipitates is a simple and expedient means of recovering Y. pseudotuberculosis from such samples.

Avery, S.V. and Tobin, J.M. (1992), Mechanisms of strontium uptake by laboratory and brewing strains of *Saccharomyces cerevisiae*. *Applied and Environmental Microbiology*, **58** (12), 3883-3889.

Full Text: [A\App Env Mic58, 3883.pdf](A/App%20Env%20Mic58,%203883.pdf)

Abstract: Laboratory and brewing strains of Saccharomyces cerevisiae were compared for metabolism-independent and -dependent Sr2+ uptake. Cell surface adsorption of Sr2+ to live cells was greater in the brewing than in the laboratory strain examined. However, uptake levels were greater in denatured (dried and ground) S. cerevisiae, and the relative affinities of Sr2+ for the two strains were reversed. Results for the brewing S. cerevisiae strain were similar whether the organism was obtained fresh from brewery waste or after culturing under the same conditions as for the laboratory strain. Reciprocal Langmuir plots of uptake data for live biomass were not linear, whereas those for denatured biomass were. The more complex Sr2+ binding mechanism inferred for live S. cerevisiae was underlined by cation displacement experiments. Sr2+ adsorption to live cells resulted in release of Mg2+, Ca2+, and H+, suggesting a combination of ionic and covalent bonding of Sr2+. In contrast, Mg2+ was the predominant exchangeable cation on denatured biomass, indicating primarily electrostatic attraction of Sr2+. Incubation of live S. cerevisiae in the presence of glucose resulted in a stimulation of Sr2+ uptake. Cell fractionation revealed that this increased Sr2+ uptake was mostly due to sequestration of Sr2+ in the vacuole, although a small increase in cytoplasmic Sr2+ was also evident. No stimulation or inhibition of active H+ efflux resulted from metabolism-dependent Sr2+ accumulation. However, a decline in cytoplasmic, and particularly vacuolar, Mg2+, in comparison with that of cells incubated with Sr2+ in the absence of glucose, was apparent. This was most marked for the laboratory S. cerevisiae strain, which contained higher Mg2+ levels than the brewing strain.

Keywords: *Rhizopus-Arrhizus* Biomass, Heavy-Metal, Yeast, Accumulation, Cations, Kinetics, Protons, Algae, Ions, pH

Tsai, Y.L., Palmer, C.J. and Sangermano, L.R. (1993), Detection of *Escherichia coli* in sewage and sludge by polymerase chain reaction. *Applied and Environmental Microbiology*, **59** (2), 353-357.

Full Text: [A\App Env Mic59, 353.pdf](A/App%20Env%20Mic59,%20353.pdf)

Abstract: A method in which the polymerase chain reaction (PCR) was used was developed to amplify either a uidA gene fragment or a 16S rRNA gene fragment from *Escherichia coli* in sewage and sludge. Because of interference caused by humic acidlike substances, crude DNA extracts were purified with a Sephadex G-200 spun column before the PCR was begun. A Southern analysis in which a nonradioactive chemiluminescent method was used was performed to confirm the presence of PCR products. The sensitivity of detection for PCR products when the chemiluminescent method was used was determined to be 30 ag of E. coli genomic DNA template. In seeded sludge, the PCR amplified the target DNA from 80 E. coli cells per g of sludge and 50 Shigella dysenteriae cells per g of sludge. Because only 0.05 aliquot of a sludge extract was used for the PCR, we deduced that the PCR detected target DNA equivalent to the DNA of 2.5 to 4 cells in the extract. The PCR amplified the uidA fragment from diluted sewage influents and effluents containing E. coli cells. Therefore, the PCR performed with a chemiluminescent gene probe can be used to detect the presence of potentially pathogenic microorganisms in sewage and sludge. This technique can be expanded to permit direct detection of pathogenic microorganisms in water samples, thus leading to enhanced public health protection.

Palmer, C.J., Tsai, Y.L., Lang, A.L. and Sangermano, L.R. (1993), Evaluation of colilert-marine water for detection of total coliforms and *Escherichia coli* in the marine environment. *Applied and Environmental Microbiology*, **59** (3), 786-790.

Full Text: [A\App Env Mic59, 786.pdf](A/App%20Env%20Mic59,%20786.pdf)

Abstract: A test that allows for early detection of fecally contaminated coastal water would enhance public health protection. Colilert-Marine Water (Colilert-MW; Environetics, Branford, Conn.) is a rapid 24-h test that has recently been developed to detect total coliforms and *Escherichia coli* in coastal water. We performed a premarketing evaluation of the Colilert-MW product, testing it in parallel with the multiple tube fermentation (MTF) method for 86 coastal water samples in southern California. Statistical analysis was performed by using paired t tests and linear regression. Bacterial isolates were evaluated by biochemical and genetic analysis. The results of this study showed a strong correlation between the traditional MTF and the Colilert-MW method for detection of total coliforms (r = 0.95) and E. coli (r = 0.89) in ocean water samples. Paired t-test results indicated that the Colilert-MW and MTF were equivalent in detecting E. coli and that the Colilert-MW may be more sensitive in the detection of total coliforms. We conclude that Colilert-MW would be a useful tool with which to monitor coastal beach water.

Shahamat, M., Mai, U., Paszko Kolva, C., Kessel, M. and Colwell, R.R. (1993), Use of autoradiography to assess viability of *Helicobacter pylori* in water. *Applied and Environmental Microbiology*, **59** (4), 1231-1235.

Full Text: [A\App Env Mic59, 1231.pdf](A/App%20Env%20Mic59,%201231.pdf)

Abstract: Autoradiographic methods have been developed to detect metabolic activity of viable but nonculturable cells of Helicobacter pylori in water. Four strains of H. pylori were studied by using microcosms containing suspensions of 72-h cultures in water. The suspensions of aged, nonculturable cells of H. pylori were incubated with [3H]thymidine for 24 to 72 h, after which the cell suspensions were exposed to Kodak NTB2 emulsion for 3 to 28 days. Each sample was processed with three separate controls to rule out false-positive reactions. The organism remains viable and culturable under these conditions for up to 48 h and, in some cases, 20 to 30 days, depending on physical conditions of the environment. We found that temperature was a significant (P < or equal to 0.01) environmental factor associated with the viability of H. pylori cells in water. Autoradiographs of tritium-labeled cells of H. pylori revealed aggregations of silver grains associated with uptake by H. pylori of radiolabelled substrate. Findings based on the autoradiographic approach give strong evidence supporting the hypothesis that there is a waterborne route of infection for H. pylori. The possibility that H. pylori may persist in water in a metabolically active stage but not actively growing and dividing is intriguing and relevant to public health concerns.

Shuttleworth, K.L. and Unz, R.F. (1993), Sorption of heavy metals to the filamentous bacterium *Thiothrix* strain A1. *Applied and Environmental Microbiology*, **59** (5), 1274-1282.

Full Text: [A\App Env Mic59, 1274.pdf](A/App%20Env%20Mic59,%201274.pdf)

Abstract: A study was undertaken to determine the ability of the filamentous bacterium *Thiothrix* strain A1 to sorb heavy metals from solution. Cells of *Thiothrix* strain A1 were harvested, washed, and suspended in solutions of metals. After an equilibration period, biomass was separated from solution and the metal content in acid-digested cells and/or filtrates was determined by atomic absorption spectrophotometry. Sorption of nickel and zinc was very rapid; most of the sorbed metal was bound in less than 10 min. The sorption data for copper fit the Freundlich isotherm, and nickel and zinc data fit biphasic Freundlich isotherms. Sorption of both nickel and zinc was dependent on cell age. Cells harvested 24 h after inoculation sorbed approximately one-half of the amount of metal per gram cell protein than did cells harvested after 48, 72, or 96 h. Calcium and magnesium effectively competed with zinc for binding sites, whereas potassium had only a slight effect on the capacity of cells to sorb zinc. The primary mechanism of metal sorption apparently was ion exchange, because 66 to 75% of nickel or zinc could be desorbed by placing metal-laden cells in a solution of 5 mM CaCl2. A competition experiment with nickel and zinc indicated that both metals occupied the same sorption sites. The strong chelating agents EDTA and NTA effectively prevented metal uptake, but lactate enhanced the uptake of nickel. *Thiothrix* strain A1 grown in nickel-containing medium had a relatively low uptake of nickel compared with uptake by resting cells suspended in a simple buffer solution.

Tatara, G.M., Dybas, M.J. and Criddle, C.S. (1993), Effects of medium and trace metals on kinetics of carbon tetrachloride transformation by *Pseudomonas* sp. strain KC. *Applied and Environmental Microbiology*, **59** (7), 2126-2131.

Full Text: [A\App Env Mic59, 2126.pdf](A/App%20Env%20Mic59,%202126.pdf)

Abstract: Under denitrifying conditions, *Pseudomonas* sp. strain KC transforms carbon tetrachloride (CT) to carbon dioxide via a complex but as yet undetermined mechanism. Transformation rates were first order with respect to CT concentration over the CT concentration range examined (0 to 100 micrograms/liter) and proportional to protein concentration, giving pseudo-second-order kinetics overall. Addition of ferric iron (1 to 20 microM) to an actively transforming culture inhibited CT transformation, and the degree of inhibition increased with increasing iron concentration. By removing iron from the trace metals solution or by removing iron-containing precipitate from the growth medium, higher second-order rate coefficients were obtained. Copper also plays a role in CT transformation. Copper was toxic at neutral pH. By adjusting the medium pH to 8.2, soluble iron and copper levels decreased as a precipitate formed, and CT transformation rates increased. However, cultures grown at high pH without any added trace copper (1 microM) exhibited slower growth rates and greatly reduced rates of CT transformation, indicating that copper is required for CT transformation. The use of pH adjustment to decrease iron solubility, to avoid copper toxicity, and to provide a selective advantage for strain KC was evaluated by using soil slurries and groundwater containing high levels of iron. In samples adjusted to pH 8.2 and inoculated with strain KC, CT disappeared rapidly in the absence or presence of acetate or nitrate supplements. CT did not disappear in pH-adjusted controls that were not inoculated with strain KC. [Journal Article; In English; United States]

Avery, S.V. and Tobin, J.M. (1993), Mechanism of adsorption of hard and soft metal-ions to *Saccharomyces cerevisiae* and influence of hard and soft anions. *Applied and Environmental Microbiology*, **59** (9), 2851-2856.

Full Text: [A\App Env Mic59, 2851.pdf](A/App%20Env%20Mic59,%202851.pdf)

Abstract: The applicability of the hard-and-soft principle of acids and bases in predicting metal adsorption characteristics in a biological context was investigated for metabolism-independent uptake of the metal ions Sr2+, Mn2+, Zn2+, Cu2+, Cd2+, and Tl+ by Saccharomyces cerevisiae. Metal adsorption increased with external metal concentration (5 to 50 muM), although some saturation of uptake of the harder ions examined, Sr2+, Mn2+, and Zn2+, was evident at the higher metal concentrations. Cation displacement experiments indicated that, with the exception of Tl+, relative covalent bonding (H+ displacement) of the metals was greater at low metal concentrations, while weaker electrostatic interactions (Mg2+ plus Ca2+ displacement) became increasingly important at higher concentrations. These results were correlated with curved Scatchard and reciprocal Langmuir plots of metal uptake data. Saturation of covalent binding sites was most marked for the hard metals, and consequently, although no relationship between metal hardness and ionic/covalent bonding ratios was evident at 10 muM metal, at 50 muM the ratio was generally higher for harder metals. Increasing inhibition of metal uptake at increasing external anion concentrations was partially attributed to the formation of metal-anion complexes. Inhibitory effects of the hard anion SO42- were most marked for uptake of the hard metals Sr2+ and Mn2+, whereas greater relative effects on adsorption of the softer cations Cu2+ and Cd2+ were correlated with complexation by the soft anion S2O32-. Inhibition of uptake of the borderline metal Zn2+ by SO42- and that by S2O32- were approximately equal. The results showed good agreement with the hard-and-soft principle with respect to both the nature of bonding and preferred ligand binding of the metals examined, and the implications for biological systems are discussed.

Keywords: *Rhizopus-Arrhizus* Biomass, Protons, Algae, Accumulation, Exchange, Cations, Wastes

Kapperud, G., Vardund, T., Skjerve, E., Hornes, E. and Michaelsen, T.E. (1993), Detection of pathogenic *Yersinia enterocolitica* in foods and water by immunomagnetic separation, nested polymerase chain reactions, and colorimetric detection of amplified DNA. *Applied and Environmental Microbiology*, **59** (9), 2938-2944.

Full Text: [A\App Env Mic59, 2938.pdf](A/App%20Env%20Mic59,%202938.pdf)

Abstract: A two-step polymerase chain reaction (PCR) procedure with two nested pairs of primers specific for the yadA gene of Yersinia enterocolitica was developed. The PCR assay identified all common pathogenic serogroups (O: 3, O: 5, 27, O: 8, O: 9, O: 13, and O: 21) from three continents and differentiated pathogenic Y. enterocolitica from Y. pseudotuberculosis and from a variety of nonpathogenic yersiniae representing 25 serogroups and four species. The performance of the method was evaluated with seeded food and water samples. We compared two procedures for sample preparation prior to PCR: one was based on immunomagnetic separation of the target bacteria from the sample, using magnetic particles coated with immunoglobulin antibodies to Y. enterocolitica serogroup O: 3, and the other method consisted of a series of centrifugation steps combined with proteinase treatment. Regardless of the method used, the PCR assay was capable of detecting 10 to 30, C.F., U/g of meat in 10 (6)-fold excess of indigenous bacteria. When the samples were enriched overnight in a nonselective medium, the sensitivity was increased to approximately 2, C.F., U/g, except for samples with an extremely high background flora (> 10 (7), C.F., U/g). We compared gel electrophoretic detection of PCR products with a colorimetric detection method designated DIANA (detection of immobilized amplified nucleic acids), which enabled easy visualization of amplified fragments in a microtiter plate format with an optical density reader. DIANA and gel electrophoresis showed complete concordance in their discrimination between positive and negative samples. The combination of immunomagnetic separation, nested PCR, and DIANA makes possible the development of a fully automated analytic process which requires a minimum of laboratory manipulations.

Havelaar, A.H., van Olphen, M. and Drost, Y.C. (1993), F-specific RNA bacteriophages are adequate model organisms for enteric viruses in fresh water. *Applied and Environmental Microbiology*, **59** (9), 2956-2962.

Full Text: [A\App Env Mic59, 2956.pdf](A/App%20Env%20Mic59,%202956.pdf)

Abstract: Culturable enteroviruses were detected by applying concentration techniques and by inoculating the concentrates on the BGM cell line. Samples were obtained from a wide variety of environments, including raw sewage, secondary effluent, coagulated effluent, chlorinated and UV-irradiated effluents, river water, coagulated river water, and lake water. The virus concentrations varied widely between 0.001 and 570/liter. The same cell line also supported growth of reoviruses, which were abundant in winter (up to 95% of the viruses detected) and scarce in summer (less than 15%). The concentrations of three groups of model organisms in relation to virus concentrations were also studied. The concentrations of bacteria (thermotolerant coliforms and fecal streptococci) were significantly correlated with virus concentrations in river water and coagulated secondary effluent, but were relatively low in disinfected effluents and relatively high in surface water open to nonhuman fecal pollution. The concentrations of F-specific RNA bacteriophages (FRNA phages) were highly correlated with virus concentrations in all environments studied except raw and biologically treated sewage. Numerical relationships were consistent over the whole range of environments; the regression equations for FRNA phages on viruses in river water and lake water were statistically equivalent. These relationships support the possibility that enteric virus concentrations can be predicted from FRNA phage data.

Finch, G.R., Daniels, C.W., Black, E.K., Schaefer III, F.W. and Belosevic, M. (1993), Dose response of *Cryptosporidium parvum* in outbred neonatal CD-1 mice. *Applied and Environmental Microbiology*, **59** (11), 3661-3665.

Full Text: [A\App Env Mic59, 3661.pdf](A/App%20Env%20Mic59,%203661.pdf)

Abstract: *Cryptosporidium parvum* infectivity in a neonatal CD-1 mouse model was used to determine the dose needed to infect 50% of the population. The 50% infective dose was estimated to be 79 oocysts. It was observed that a mean oral inoculum of 23 oocysts produced infection in 2 of 25 neonatal mice 7 days postinoculation. All animals became infected when the mean oral dose exceeded 310 oocysts per animal. The dose response of *C. parvum* was modeled with a logit dose-response model suitable for use in water disinfection studies.

Ollikka, P., Alhonmaki, K., Leppanen, V.M., Glumoff, T., Raijola, T. and Suominen, I. (1993), Decolorization of azo, triphenyl methane, heterocyclic, and polymeric dyes by lignin peroxidase isoenzymes from *Phanerochaete chrysosporium*. *Applied and Environmental Microbiology*, **59** (12), 4010-4016.

Full Text: [A\App Env Mic59, 4010.pdf](A/App%20Env%20Mic59,%204010.pdf)

Abstract: The ligninolytic enzyme system of Phanerochaete chrysosporium decolorizes several recalcitrant dyes. Three isolated lignin peroxidase isoenzymes (LiP 4.65, LiP 4.15, and LiP 3.85) were compared as decolorizers with the crude enzyme system from the culture medium. LiP 4.65 (H2), LiP 4.15 (H7), and LiP 3.85 (H8) were purified by chromatofocusing, and their kinetic parameters were found to be similar. Ten different types of dyes, including azo, triphenyl methane, heterocyclic, and polymeric dyes, were treated by the crude enzyme preparation. Most of the dyes lost over 75% of their color; only Congo red, Poly R-478, and Poly T-128 were decolorized less than the others, 54, 46, and 48%, respectively. Five different dyes were tested for decolorization by the three purified isoenzymes. The ability of the isoenzymes to decolorize the dyes in the presence of veratryl alcohol was generally comparable to that of the crude enzyme preparation, suggesting that lignin peroxidase plays a major role in the decolorization and that manganese peroxidase is not required to start the degradation of these dyes. In the absence of veratryl alcohol, the decolorization activity of the isoenzymes was in most cases dramatically reduced. However, LiP 3.85 was still able to decolorize 20% of Methylene blue and methyl orange and as much as 60% of toluidine blue 0, suggesting that at least some dyes can function as substrates for isoenzyme LiP 3.85 but not to the same extent for LiP 4.15 or LiP 4.65. Thus, the isoenzymes have different specificities towards dyes as substrates.

Keywords: Veratryl Alcohol, Degrading Basidiomycete, Fungus, Biodegradation, Degradation, Oxidation, Genes, Purification, Streptomyces, Sequences

Payne, G.F. and Sun, W.Q. (1994), Tyrosinase reaction and subsequent chitosan adsorption for selective removal of a contaminant from a fermentation recycle stream. *Applied and Environmental Microbiology*, **60** (2), 397-401.

Full Text: [A\App Env Mic60, 397.pdf](A/App%20Env%20Mic60,%20397.pdf)

Abstract: In the industrial production of penicillin V, the phenoxyacetate precursor is added to the fermenter to direct biosynthesis. When used for producing semisynthetic penicillins, the penicillin V is often hydrolyzed to 6-aminopenicillanic acid with the regeneration of the phenoxyacetate precursor. To reduce raw-material as well as waste-disposal costs, it is desirable to recycle the phenoxyacetate precursor. Unfortunately, the recycle stream is generally contaminated by the p-hydroxylated derivative of this precursor. We examined a two-step approach to eliminate this contaminant. In the first step the tyrosinase enzyme was used to selectively convert the p-hydroxyphenoxyacetate contaminant to a reactive intermediate-presumabIy its quinone. In the second step, the tyrosinase-generated reactive intermediate was allowed to react with and strongly bind to chitosan. In contrast, the phenoxyacetate precursor was neither oxidized by tyrosinase nor bound to chitosan. When concentrated phenoxyacetate solutions were tested, the combination of tyrosinase and chitosan effectively converted low levels of the p-hydroxyphenoxyacetate contaminant and removed its products from solution, while the concentration of the phenoxyacetate precursor was unaffected.

Keywords: Phenols

de Paola, A., Capers, G.M. and Alexander, D. (1994), Densities of *Vibrio vulnificus* in the intestines of fish from the U.S. Gulf Coast. *Applied and Environmental Microbiology*, **60** (3), 984-988.

Full Text: [A\App Env Mic60, 984.pdf](A/App%20Env%20Mic60,%20984.pdf)

Abstract: Densities of Vibrio vulnificus in the intestinal contents of various finfish, oysters, and crabs and in sediment and waters of the U.S. Gulf Coast were determined by the most probable number procedure. Species were identified by enzyme immunoassay. During the winter, densities of V. vulnificus were low, and the organism was isolated more frequently from sheepshead fish than from sediment and seawater. From April to October, V. vulnificus densities were considerably higher (2 to 5 logs) in estuarine fish than in surrounding water, sediment, or nearby oysters and crustacea. Highest densities were found in the intestinal contents of certain bottom-feeding fish (10 (8)/100 g), particularly those that consume mollusks and crustaceans. Densities of V. vulnificus in fish that feed primarily on plankton and other finfish were similar to those in oysters, sediment, and crabs (10 (5)/100 g). V. vulnificus was found infrequently in offshore fish. The presence of high densities of V. vulnificus in the intestines of common estuarine fish may have both ecological (growth and transport) and public health (food and wound infections) implications.

Walters, M., Milton, D., Larsson, L. and Ford, T. (1994), Airborne environmental endotoxin: A cross-validation of sampling and analysis techniques. *Applied and Environmental Microbiology*, **60** (3), 996-1005.

Full Text: [A\App Env Mic60, 996.pdf](A/App%20Env%20Mic60,%20996.pdf)

Abstract: A standard method for measurement of airborne environmental endotoxin was developed and field tested in a fiberglass insulation-manufacturing facility. This method involved sampling with a capillary-pore membrane filter, extraction in buffer using a sonication bath, and analysis by the kinetic-Limulus assay with resistant-parallel-line estimation (KLARE). Cross-validation of the extraction and assay method was performed by comparison with methanolysis of samples followed by 3-hydroxy fatty acid (3-OHFA) analysis by gas chromatography-mass spectrometry. Direct methanolysis of filter samples and methanolysis of buffer extracts of the filters yielded similar 3-OHFA content (P = 0.72); the average difference was 2.1%. Analysis of buffer extracts for endotoxin content by the KLARE method and by gas chromatography-mass spectrometry for 3-OHFA content produced similar results (P = 0.23); the average difference was 0.88%. The source of endotoxin was gram-negative bacteria growing in recycled washwater used to clean the insulation-manufacturing equipment. The endotoxin and bacteria become airborne during spray cleaning operations. The types of 3-OHFAs in bacteria cultured from the washwater, present in the washwater and in the air, were similar. Virtually all of the bacteria cultured from air and water were gram negative composed mostly of two species, Deleya aesta and Acinetobacter johnsonii. Airborne countable bacteria correlated well with endotoxin (r2 = 0.64). Replicate sampling showed that results with the standard sampling, extraction, and Limulus assay by the KLARE method were highly reproducible (95% confidence interval for endotoxin measurement±0.28 log10). These results demonstrate the accuracy, precision, and sensitivity of the standard procedure proposed for airborne environmental endotoxin.

Krovacek, K., Pasquale, V., Baloda, S.B., Soprano, V., Conte, M. and Dumontet, S. (1994), Comparison of putative virulence factors in *Aeromonas hydrophila* strains isolated from the marine environment and human diarrheal cases in southern Italy. *Applied and Environmental Microbiology*, **60** (4), 1379-1382.

Full Text: [A\App Env Mic60, 1379.pdf](A/App%20Env%20Mic60,%201379.pdf)

Abstract: Aeromonas hydrophila strains isolated from the same geographical region (southern Italy) but from different sources (sea sediments and human diarrhea cases) were characterized for the production of potential virulence determinants, such as production of cytotoxins, cytotonic toxins, hemolysin, and dermonecrotic factors and their capacity to adhere to human intestinal 407 cells in vitro. The results showed that isolates from both the sources produced all or some of the virulence factors which may be involved in the pathogenesis of Aeromonas-associated infections. Our study indicates that further epidemiological studies are necessary to elucidate the public health significance of infections caused by Aeromonas spp.

Mago, R. and Srivastava, S. (1994), Uptake of zinc in *Pseudomonas* sp. strain UDG26. *Applied and Environmental Microbiology*, **60** (7), 2367-2370.

Full Text: [A\App Env Mic60, 2367.pdf](A/App%20Env%20Mic60,%202367.pdf)

Abstract: Zinc resistance in *Pseudomonas* sp. strain UDG26 was inducible. Induction led to enhanced uptake of the metal. A zinc-sensitive variant(UDG86) took up significantly less metal ion than the resistant one did. The affinity of uninduced and sensitive cells to zinc was. less than that of resistant, induced cells. Metal accumulation by induced cells was not inhibited by azide, while 2,4-dinitrophenol and N-N’-dicyclohexylcar-bodiimide enhanced zinc uptake because of inhibition of efflux. Transcription and translation inhibitors drastically reduced zinc accumulation, bringing it to the level found in the sensitive strain. These results suggest the involvement of protein(s) in zinc resistance.

Keywords: Alcaligenes-Eutrophus, Staphylococcus-Aureus, Cadmium Transport, Escherichia-Coli, Binding Protein, Plasmid, Resistance, Cobalt, Efflux, Metallothionein

Lang, A.L., Tsai, Y.L., Mayer, C.L., Patton, K.C., Palmer, C.J. (1994), Multiplex PCR for detection of the heat-labile toxin gene and shiga-like toxin I and II genes in *Escherichia coli* isolated from natural waters. *Applied and Environmental Microbiology*, **60** (9), 3145-3149.

Full Text: [A\App Env Mic60, 3145.pdf](A/App%20Env%20Mic60,%203145.pdf)

Abstract: A triplex PCR method was developed to simultaneously amplify a heat-labile toxin sequence (LT) of 258 bp, a shiga-like toxin I sequence (SLT I) of 130 bp, and a shiga-like toxin II sequence (SLT II) of 346 bp from toxigenic strains of *Escherichia coli*. This method was used to screen 377 environmental E. coli isolates from marine waters or estuaries located in Southern California and North Carolina for enterotoxigenic or enterohemorrhagic E. coli strains. of the 377 E. coli screened, one isolate was found to belong to the enterotoxigenic group, since it contained a LT homologous sequence, and one isolate was found to belong to the enterohemorrhagic group, since it contained a SLT I homologous sequence. None was found to contain SLT II homologous sequences. The pathogenicity of the positive environmental E. coli isolates was confirmed by standard bioassays with Y-1 adrenal cells and Vero cells to confirm toxin production. Our results suggest that toxigenic E. coli occurs infrequently in environmental waters and that there is a low public health risk from toxigenic E. coli in coastal waters.

Koh, E.G.L., Huyn, J.H. and LaRock, P.A. (1994), Pertinence of indicator organisms and sampling variables to Vibrio concentrations. *Applied and Environmental Microbiology*, **60** (10), 3897-3900.

Full Text: [A\App Env Mic60, 3897.pdf](A/App%20Env%20Mic60,%203897.pdf)

Abstract: Vibrio-indicator relationships and effects of day, depth, and tidal levels on the density of vibrios enumerated by the most probable number technique were investigated. Counts of vibrios taken monthly from Apalachicola Bay, Fla., were either negatively correlated or showed no correlation with counts of indicator bacteria (*Escherichia coli*, enterococci, fecal coliforms, and total coliforms). Water samples collected on two days from the surface and bottom over a complete tidal cycle on each day were analyzed for differences in vibrio concentrations. Concentrations of vibrios in samples taken on different days, in those taken at different depths, and in those taken at different tidal levels were significantly different, indicating that these factors need to be taken into account in health-related studies.

Douwes, J., Versloot, P., Hollander, A., Heederik, D. and Doekes, G. (1995), Influence of various dust sampling and extraction methods on the measurement of airborne endotoxin. *Applied and Environmental Microbiology*, **61** (5), 1763-1769.

Full Text: [A\App Env Mic61, 1763.pdf](A/App%20Env%20Mic61,%201763.pdf)

Abstract: The influence of various filter types and extraction conditions on the quantitation of airborne endotoxin with the Limulus amebocyte lysate test was studied by using airborne dusts sampled in a potato processing plant. Samples were collected with an apparatus designed to provide parallel samples. Data from the parallel-sampling experiment were statistically evaluated by using analysis of variance. In addition, the influence of storage conditions on the detectable endotoxin concentration was investigated by using commercially available lipopolysaccharides (LPS) and endotoxin-containing house dust extracts. The endotoxin extraction efficiency of 0.05% Tween 20 in pyrogen-free water was seven times higher than that of pyrogen-free water only. Two-times-greater amounts of endotoxin were extracted from glass fiber, Teflon, and polycarbonate filters than from cellulose ester filters. The temperature and shaking intensity during extraction were not related to the extraction efficiency. Repeated freeze (-20°C)-and-thaw cycles with commercial LPS reconstituted in pyrogen-free water had a dramatic effect on the detectable endotoxin level. A 25% loss in endotoxin activity per freeze-thaw cycle was observed. Storage of LPS samples for a period of 1 year at 7°C had no effect on the endotoxin level. House dust extracts showed a decrease of about 20% in the endotoxin level after they had been frozen and thawed for a second time. The use of different container materials (borosilicate glass, “soft” glass, and polypropylene) did not result in different endotoxin levels. This study indicates that the assessment of endotoxin exposure may differ considerably between groups when different sampling, extraction, and storage procedures are employed.

Kilvington, S. and Beeching, J. (1995), Identification and epidemiological typing of *Naegleria fowleri* with DNA probes. *Applied and Environmental Microbiology*, **61** (6), 2071-2078.

Full Text: [A\App Env Mic61, 2071.pdf](A/App%20Env%20Mic61,%202071.pdf)

Abstract: Naegleria fowleri is a small free-living amoeboflagellate found in warm water habitats worldwide. The organism is pathogenic to humans, causing fatal primary amoebic meningoencephalitis. When monitoring the environment for the presence of N. fowleri, it is important to reliably differentiate the organism from other closely related but nonpathogenic species. To this end, we have developed species-specific DNA probes for use in the rapid identification of N. fowleri from the environment. Samples were taken from the thermal springs in Bath, England, and cultured for amoebae. of 84 isolates of thermophilic Naegleria spp., 10 were identified as N. fowleri by probe hybridization. The identity of these isolates was subsequently confirmed by their specific whole-cell DNA restriction fragment length polymorphisms (RFLPs). One DNA clone was found to contain a repeated element that detected chromosomal RFLPs that were not directly visible on agarose gels. This enabled the further differentiation of strains within geographically defined whole-cell DNA RFLP groups. N. fowleri DNA probes represent a specific and potentially rapid method for the identification of the organism soon after primary isolation from the environment.

Muraleedharan, T.R., Iyengar, L. and Venkobachar, C. (1995), Screening of tropical wood-rotting mushrooms for copper biosorption. *Applied and Environmental Microbiology*, **61** (9), 3507-3508.

Full Text: [A\App Env Mic61, 3507.pdf](A/App%20Env%20Mic61,%203507.pdf)

Abstract: Fruiting bodies (mushrooms) of nine nonedible macrofungi were screened forcopper(II) uptake potential. The maximum uptake potentials (Qmaxs)derived from equilibrium studies indicated that all nine species exhibitedhigher Qmaxs at pH 4.0 than that of Filtrasorb-400, a generally usedadsorbent for metal removal. Wide variation in Qmax was observed amongthe species and ranged from 0.048 to 0.383 mmol per g of sorbent. Theuptake capacity of Ganoderma lucidum, which exhibited the highestQmax, was higher than those of other microbial biosorbents reported inthe literature.

Keywords: Adsorbent, Biomass, Metal, Metal Removal, pH, Removal, Sorbent

Kilvington, S. and Beeching, J. (1995), Development of a PCR for identification of *Naegleria fowleri* from the environment. *Applied and Environmental Microbiology*, **61** (10), 3764-3767.

Full Text: [A\App Env Mic61, 3764.pdf](A/App%20Env%20Mic61,%203764.pdf)

Abstract: A species-specific PCR for the identification of Naegleria fowleri was developed. In sensitivity studies, 10 trophozoites or cysts and 1 trophozoite or cyst could be detected after 35 and 45 cycles, respectively. In conjunction with a rapid DNA isolation method, this PCR was used to identify N. fowleri directly from primary cultures of environmental samples.

Grimberg, S.J., Stringfellow, W.T. and Aitken, M.D. (1996), Quantifying the biodegradation of phenanthrene by *Pseudomonas stutzeri* P16 in the presence of a nonionic surfactant. *Applied and Environmental Microbiology*, **62** (7), 2387-2392.

Full Text: [A\App Env Mic62, 2387.pdf](A/App%20Env%20Mic62,%202387.pdf)

Abstract: The low water solubility of polycyclic aromatic hydrocarbons is believed to limit their availability to microorganisms, which is a potential problem for bioremediation of polycyclic aromatic hydrocarbon-contaminated sites. Surfactants have been suggested to enhance the bioavailability of hydrophobic compounds, but both negative and positive effects of surfactants on biodegradation have been reported in the literature. Earlier, we presented mechanistic models of the effects of surfactants on phenanthrene dissolution and on the biodegradation kinetics of phenanthrene solubilized in surfactant micelles. In this study, we combined the biodegradation and dissolution models to quantify the influence of the surfactant Tergitol NP-10 on biodegradation of solid-phase phenanthrene by *Pseudomonas* *stutzeri* P16. Although micellized phenanthrene does not appear to be available directly to the bacterium, the ability of the surfactant to increase the phenanthrene dissolution rate resulted in an overall increase in bacterial growth rate in the presence of the surfactant. Experimental observations could be predicted well by the derived model with measured biokinetic and dissolution parameters. The proposed model therefore can serve as a base case for understanding the physical-chemical effects of surfactants on nonaqueous hydrocarbon bioavailability.

Douwes, J., Doekes, G., Montijn, R., Heederik, D. and Brunekreef, B. (1996), Measurement of beta (1-->3)-glucans in occupational and home environments with an inhibition enzyme immunoassay. *Applied and Environmental Microbiology*, **62** (9), 3176-3182.

Full Text: [A\App Env Mic62, 3176.pdf](A/App%20Env%20Mic62,%203176.pdf)

Abstract: beta (1->3)-Glucans are known for their potent ability to induce nonspecific inflammatory reactions and are believed to play a role in bioaerosol-induced respiratory symptoms. An inhibition enzyme immunoassay (EIA) was developed for the quantitation of beta (1->3)-glucans in dust samples from occupational and residential environments. Immunospecific rabbit antibodies were produced by immunization with bovine serum albumin-conjugated laminarin [beta (1->3)-glucan] and affinity chromatography on epoxy-Sepharose-coupled beta (1->3)-glucans. The laminarin-based calibration curve in the inhibition EIA ranged from approximately 40 to 3,000 ng/ml (15 to 85% inhibition). Another beta (1->3)-glucan (curdlan) showed a similar inhibition curve but was three to five times less reactive on a weight basis. Pustulan, presumed to be a beta (1->6)-glucan, showed a parallel dose-response curve at concentrations 10 times higher than that of laminarin. Control experiments with NaIO4 and beta (1->3)-glucanase treatment to destroy beta (1->6)-and beta (1->3)-glucan structures, respectively, indicate that the immunoreactivity of pustulan in the assay was due to beta (1->3)-glucan and not to beta (1->6)-glucan structures. Other polysaccharides, such as mannan and alpha (1->6)-glucan, did not react in the inhibition EIA. Beta (1->3)-Glucan extraction of dust samples in water (with mild detergent) was performed by heat treatment (120°C) because aqueous extracts obtained at room temperature did not contain detectable beta (1->3)-glucan levels. The assay was shown to detect heat-extractable beta (1->3)-glucan in dust samples collected in a variety of occupational and environmental settings. On the basis of duplicate analyses of dust samples, a coefficient of variation of approximately 25% was calculated. It was concluded that the new inhibition EIA offers a useful method for indoor beta (1->3)-glucan exposure assessment.

Graczyk, T.K., Cranfield, M.R., Fayer, R. and Anderson, M.S. (1996), Viability and infectivity of *Cryptosporidium parvum* oocysts are retained upon intestinal passage through a refractory avian host. *Applied and Environmental Microbiology*, **62** (9), 3234-3237.

Full Text: [A\App Env Mic62, 3234.pdf](A/App%20Env%20Mic62,%203234.pdf)

Abstract: Six *Cryptosporidium*-free Peking ducks (*Anas platyrhynchos*) were each orally inoculated with 2.0×106 *Cryptosporidium parvum* oocysts infectious to neonatal BALB/c mice. Histological examination of the stomachs jejunums, ilea, ceca, cloacae, larynges, tracheae, and lungs of the ducks euthanized on day 7 postinoculation (p.i.) revealed no life-cycle stages of *C. parvum*. However, inoculum-derived oocysts extracted from duck feces established severe infection in eight neonatal BALB/c mice (inoculum dose, 2.5×105 per mouse). On the basis of acid-fast stained direct wet smears, 73% of the oocysts in duck feces were intact (27% were oocyst shells), and their morphological features conformed to those of viable and infectious oocysts of the original inoculum. The fluorescence scores of the inoculated oocysts, obtained by use of the MERIFLUOR test, were identical to those obtained for the feces-recovered oocysts (the majority were 3+ to 4+). The dynamics of oocyst shedding showed that the birds released a significantly higher number of intact oocysts than the oocyst shells (P < 0.01). The number of intact oocysts shed (87%) during the first 2 days p.i. was significantly higher than the number shed during the remaining 5 days p.i. (P < 0.01) and significantly decreased from day 1 to day 2 p.i. (P < 0.01). The number of oocyst shells shed during 7 days p.i. did not vary significantly (P > 0.05). The retention of infectivity of *C. parvum* oocysts after intestinal passage through an aquatic bird has serious epidemiological and epizootiological implications. Waterfowl may serve as mechanical vectors for the waterborne oocysts and may enhance contamination of surface waters with *C. parvum*. As the concentration of *Cryptosporidium* oocysts in source waters is attributable to watershed management practices, the watershed protection program should consider waterfowl as a potential factor enhancing contamination of the source water with *C. parvum*.

Budnick, G.E., Howard, R.T. and Mayo, D.R. (1996), Evaluation of Enterolert for enumeration of enterococci in recreational waters. *Applied and Environmental Microbiology*, **62** (10), 3881-3884.

Full Text: [A\App Env Mic62, 3881.pdf](A/App%20Env%20Mic62,%203881.pdf)

Abstract: Enterolert (IDEXX Laboratories Inc., Westbrook, Maine), a semiautomated, most probable number method for enumeration of enterococci, was compared with the standard membrane filter method by parallel testing of 138 marine and freshwater recreational bathing water samples. No statistically significant difference and a strong linear correlation were found between methods. Culturing of 501 Enterolert test wells resulted in false-positive and false-negative rates of 5.1 and 0.4%, respectively. Less time for setup, incubation (24 versus 48 h), and reading of Enterolert permits more efficient monitoring of recreational bathing areas.

Barbeau, J., Tanguay, R., Faucher, E., Avezard, C., Trudel, L., Côté, L. and Prévost, A.P. (1996), Multiparametric analysis of waterline contamination in dental units. *Applied and Environmental Microbiology*, **62** (11), 3954-3959.

Full Text: [A\App Env Mic62, 3954.pdf](A/App%20Env%20Mic62,%203954.pdf)

Abstract: Microbial contamination of dental unit waterlines is thought to be the result of biofilm formation within the small-bore tubing used for these conduits. Systematic sampling of 121 dental units located at the dental school of Université de Montréal showed that none of the waterlines was spared from bacterial contamination. Multilevel statistical analyses showed significant differences between samples taken at the beginning of the day and samples taken after a 2-min purge. Differences were also found between water from the turbine and the air/water syringe. Random variation occurred mainly between measurements (80%) and to a lesser extent between dental units (20%). In other analyses, it was observed to take less than 5 days before initial bacterial counts reached a plateau of 2×105, C.F., U/ml in newly installed waterlines. *Sphyngomonas paucimobilis*, *Acinetobacter calcoaceticus*, *Methylobacterium mesophilicum*, and *Pseudomonas aeruginosa* were the predominant isolates. P. aeruginosa showed a nonrandom distribution in dental unit waterlines, since 89.5% of the all the isolates were located in only three of the nine clinics tested. Dental units contaminated by P. aeruginosa showed significantly higher total bacterial counts than the others. By comparison, P. aeruginosa was never isolated in tap water remote from or near the contaminated dental unit waterlines. In conclusion, dental unit waterlines should be considered an aquatic ecosystem in which opportunistic pathogens successfully colonize synthetic surfaces, increasing the concentration of the pathogens in water to potentially dangerous levels. The clinical significance of these findings in relation to routine dental procedures is discussed.

Gaudet, I.D., Florence, L.Z. and Coleman, R.N. (1996), Evaluation of test media for routine monitoring of *Escherichia coli* in nonpotable waters. *Applied and Environmental Microbiology*, **62** (11), 4032-4035.

Full Text: [A\App Env Mic62, 4032.pdf](A/App%20Env%20Mic62,%204032.pdf)

Abstract: Six test media, m-TEC, m-TEC with 4-methylumbelliferyl-beta-D-glucuronide (MUG), lauryl tryptose agar (LTA) with MUG, LTA with 5-bromo-4-chloro-3-indolyl-beta-D-glucuronide (X-Glue), EC medium with MUG, and lauryl tryptose broth with MUG, were evaluated for their usefulness in enumerating *Escherichia coli* in nonpotable waters on a routine basis. The media were chosen for their case of interpretation of target colonies, ability to allow enumeration at low and high concentrations, and ability to inhibit nontarget microorganisms. The recoveries on the test media were compared with those on three reference media, R2A, m-FC, and m-Endo, by analysis of spiked samples of filter-sterilized waters. The test media were then further tested for their ability to differentiate nontarget but closely related microorganisms. Statistical analysis indicated that the best recoveries were obtained with lauryl tryptose agar with added MUG and X-Gluc. The media were then tested with surface waters that could be expected to have high levels of total and fecal coliforms along with *Escherichia coli*.

Morin, P., Camper, A., Jones, W., Gatel, D. and Goldman, J.C. (1996), Colonization and disinfection of biofilms hosting coliform-colonized carbon fines. *Applied and Environmental Microbiology*, **62** (12), 4428-4432.

Full Text: [A\App Env Mic62, 4428.pdf](A/App%20Env%20Mic62,%204428.pdf)

Abstract: The documented release of carbon fines from granular activated carbon filters is a concern for drinking water utilities. since these particles may carry coliform and even pathogenic bacteria through the disinfection barrier. Such a breakthrough could have ail impact on distribution system biofilms. Using total cell counts, specific monoclonal antibody staining, and computerized image analysis, rye monitored the colonization of introduced Klebsiella pneumoniae associated with carbon fines in mixed-population biofilms. The particles transported the coliforms to the biofilms and allowed successful colonization, Chlorine (0.5 mg/liter) was then applied as a disinfectant, Most ii, pneumoniae along with the carbon fines left the biofilm under these conditions, The impact of chlorine was greater on the coliform bacteria and carbon fines than on the general bacterial population. However, 10% of the introduced coliforms and 20% of the fines remained In biofilm. The possibility that this represents a mechanism far bacteria of public health concern to be involved in regrowth events is discussed.

Keywords: By-Product Formation, Drinking-Water, Bacteria, Particles, Systems, Biodegradation, Chlorination, Adsorption, Adsorbers, Filters

Rochelle, P.A., Ferguson, D.M., Handojo, T.J., De Leon, R., Stewart, M.H. and Wolfe, R.L. (1997), An assay combining cell culture with reverse transcriptase PCR to detect and determine the infectivity of waterborne *Cryptosporidium parvum*. *Applied and Environmental Microbiology*, **63** (5), 2029-2037.

Full Text: [A\App Env Mic63, 2029.pdf](A/App%20Env%20Mic63,%202029.pdf)

Abstract: The presence of *Cryptosporidium* in drinking water supplies is a significant problem faced by the water industry. Although a variety of methods exist for the detection of waterborne oocysts, water utilities currently have no way of assessing the infectivity of detected oocysts and consequently are unable to accurately determine the risks posed to public health by waterborne *Cryptosporidium*. In this paper, the development of an infectivity assay for waterborne *Cryptosporidium parvum* is described. Oocysts were inoculated onto monolayers of Caco-2 cells and grown on microscope slides, and infections were detected by *C. parvum* specific reverse transcriptase PCR of extracted mRNA, targeting the heat shock protein 70 (hsp70) gene. A single infectious oocyst was detected by this experimental procedure. The use of concentrated samples obtained from 250 liters of finished water had no observable effect on the integrity of cell monolayers or on the infectivity of oocysts seeded into the concentrate. Intracellular developmental stages of the parasite were also detected by using fluorescently labeled antibodies. One pair of PCR primers targeting the hsp70 gene was specific for *C. parvum*, while a second pair recognized all species of *Cryptosporidium* tested. The *C. parvum*-specific primers amplified DNA from 1 to 10 oocysts used to seed 65 to 100 liters of concentrated environmental water samples and were compatible with multiplex PCR for the simultaneous detection of *C. parvum* and *Giardia* lambia. This paper confirms the utility of PCR for the detection of waterborne *C. parvum* and, most importantly, demonstrates the potential of an in vitro infectivity assay.

Chapman, P.A., Malo, A.T., Siddons, C.A. and Harkin, M. (1997), Use of commercial enzyme immunoassays and immunomagnetic separation systems for detecting *Escherichia coli* O157 in bovine fecal samples. *Applied and Environmental Microbiology*, **63** (7), 2549-2553.

Full Text: [A\App Env Mic63, 2549.pdf](A/App%20Env%20Mic63,%202549.pdf)

Abstract: A commercial enzyme immunoassay (EIA) (E. coli O157 Visual Immunoassay; Tecra Diagnostics) performed on enrichment cultures in modified *Escherichia coli* broth (mECn) was compared with immunomagnetic separation (IMS) (Dynabeads anti-E. coli O157; Dynal) performed on enrichment cultures in modified buffered peptone water (BPW-VCC) for the detection of E. coli O157 in bovine fecal samples. Tests on fecal suspensions inoculated with each of 12 different strains of E. coli O157 showed that both the EIA and IMS methods were 10-to 100-fold more sensitive than direct culture or enrichment subculture methods for detection of the organism. EIA and IMS were then compared for detection of E. coli O157 in bovine rectal swabs. For confirmation of positive EIA tests, a commercial system (Immunocapture System [ICS]; Tecra Diagnostics) was compared with IMS; both were performed on mECn enrichment cultures. of 200 rectal swabs examined, 17 gave positive results in the EIA which were confirmed by both confirmation systems, 2 gave positive results in the EIA which were confirmed by IMS but not by ICS, and 1 gave a positive result in the EIA which was confirmed by ICS but not by IMS. of these 20, 15 were also positive by the BPW-VCC-IMS culture system; a further 3 samples were positive by this culture system but gave a negative result in the EIA. Eight samples were negative by the BPW-VCC-IMS culture system but gave a positive result in the EIA which could not be confirmed by either confirmation system. Further examination of the eight unconfirmed EIA-positive samples yielded sorbitol-fermenting E. coli O157 from three samples. of the remaining five cultures, four were positive in an EIA for verocytotoxins (VT) and two were positive in a cell culture assay for VT1. The remaining 170 samples were negative by both EIA and BPW-VCC-IMS. The Tecra EIA and IMS are both technically simple and sensitive methods for detecting E. coli O157 in bovine fecal samples. There was no statistically significant difference between the numbers of positives detected by the different assays (P = 0.29).

? Rhee, S.K., Lee, G.M., Yoon, J.H., Park, Y.H., Bae, H.S. and Lee, S.T. (1997), Anaerobic and aerobic degradation of pyridine by a newly isolated denitrifying bacterium. *Applied and Environmental Microbiology*, **63** (7), 2578-2585.

Full Text: [1997\App Env Mic63, 2578.pdf](1997/App%20Env%20Mic63,%202578.pdf)

Abstract: New denitrifying bacteria that could degrade pyridine under both aerobic and anaerobic conditions were isolated from industrial wastewater. The successful enrichment and isolation of these strains required selenite as a trace element. These isolates appeared to be closely related to Azoarcus species according to the results of 16S rRNA sequence analysis, An isolated strain, pF6, metabolized pyridine through the same pathway under both aerobic and anaerobic conditions, Since pyridine induced NAD-linked glutarate-dialdehyde dehydrogenase and isocitratase activities, it is likely that the mechanism of pyridine degradation in strain pF6 involves N-C-2 ring cleavage. Strain pF6 could degrade pyridine in the presence of nitrate, nitrite, and nitrous oxide as electron accepters. In a batch culture with 6 mM nitrate, degradation of pyridine and denitrification were not sensitively affected by the redox potential, which gradually decreased from 150 to -200 mV, In a hatch culture with the nitrate concentration higher than 6 mM, nitrite transiently accumulated during denitrification significantly inhibited cell growth and pyridine degradation, Growth yield on pyridine decreased slightly under denitrifying conditions from that under aerobic conditions, Furthermore, when the pyridine concentration used was above 12 mM, the specific growth rate under denitrifying conditions was higher than that under aerobic conditions, Considering these characteristics, a newly isolated denitrifying bacterium, strain pF6, has advantages over strictly aerobic bacteria in field applications.

Keywords: Methanococcus-Vannielii, Microbial-Metabolism, Escherichia-Coli, Nitrous-Oxide, SP-NOV, Toluene, Selenium, Soil, Denitrification, Biodegradation

Mansur, M., Suarez, T., Fernandez Larrea, J.B., Brizuela, M.A. and Gonzalez, A.E. (1997), Identification of a laccase gene family in the new lignin-degrading basidiomycete CECT 20197. *Applied and Environmental Microbiology*, **63** (7), 2637-2646.

Full Text: [A\App Env Mic63, 2637.pdf](A/App%20Env%20Mic63,%202637.pdf)

Abstract: A new lignin-degrading basidiomycete, strain I-62 (CECT 20197), isolated from decayed wood exhibited both a high dephenolization activity and decolorization capacity when tested on effluents from the sugar cane by-product fermentation industry. It has been classified as a member of the Polyporaceae family, The major ligninolytic activity detected in culture supernatants of basidiomycete I-62 was a phenoloxidase (laccase), in conjunction with small amounts of manganese peroxidase, No lignin peroxidase was detected, Laccase activity was produced in either defined or complete media. Addition of veratryl alcohol as the inducer, in defined medium, enhanced laccase production 10-fold. The use of fructose instead of glucose as a carbon source resulted in a 100-fold increase in laccase specific activity, Native isoelectrofocusing gels stained, vith guaiacol revealed the presence of at least seven laccase isozymes, with the most intense band being detected at pI 3. Southern hybridization analysis indicated the presence of a laccase gene family in strain I-62, Three different genes coding for phenoloxidases, lcc1, lcc2, and lcc3, were cloned and characterized, The high degree of homology between laccases from strain I-62 and laccases from Trametes species suggests a phylogenetic proximity between this new isolated fungus and the genus Trametes.

Keywords: White-Rot Fungi, *Phanerochaete-Chrysosporium*, *Aspergillus-Nidulans*, Trametes-Versicolor, Structural-Analysis, Hydrogen-Peroxide, Ascorbate Oxidase, Sequence-Analysis, Lentinus-Edodes, Dye Reagent

Miettinen, I.T., Vartiainen, T. and Martikainen, P.J. (1997), Phosphorus and bacterial growth in drinking water. *Applied and Environmental Microbiology*, **63** (8), 3242-3245.

Full Text: [A\App Env Mic63, 3242.pdf](A/App%20Env%20Mic63,%203242.pdf)

Abstract: The availability of organic carbon is considered the key factor to regulate microbial regrowth in drinking water network. However, boreal regions (northern Europe, Russia, and North America) contain a large amount of organic carbon in forests and peatlands. Therefore, natural waters (lakes, rivers, and groundwater) in the northern hemisphere generally have a high content of organic carbon. We found that microbial growth in drinking water in Finland is highly regulated not only by organic carbon but also by the availability of phosphorus. Microbial growth increased up to a phosphate concentration of 10 micrograms of PO4-P liter-1. Inorganic elements other than phosphorus did not affect microbial growth in drinking water. This observation offers novel possibilities to restrict microbial growth in water distribution systems by developing technologies to remove phosphorus efficiently from drinking water.

Jenkins, M.B., Anguish, L.J., Bowman, D.D., Walker, M.J. and Ghiorse, W.C. (1997), Assessment of a dye permeability assay for determination of inactivation rates of *Cryptosporidium parvum* oocysts. *Applied and Environmental Microbiology*, **63** (10), 3844-3850.

Full Text: [A\App Env Mic63, 3844.pdf](A/App%20Env%20Mic63,%203844.pdf)

Abstract: The ability to determine inactivation rates of *Cryptosporidium parvum* oocysts in environmental samples is critical for assessing the public health hazard of this gastrointestinal parasite in watersheds. We compared a dye permeability assay, which tests the differential uptake of the fluorochromes 4’-6-diamidino-2-phenylindole (DAPI) and propidium iodide (PI) by the oocysts (A. T. Campbell, L. J. Robertson, and H. V. Smith, Appl. Environ. Microbiol. 58 (3)488-3493, 1992), with an in vitro excystation assay, which tests their ability to excyst and, thus, their metabolic potential and potential for infectivity (J.B. Rose, H. Darbin, and C.P. Gerba, Water Sci. Technol. 20: 271-276, 1988). Formaldehyde-fixed (killed) oocysts and untreated oocysts were permeabilized with sodium hypochlorite and subjected to both assays. The results of the dye permeability assays were the same, while the excystation assay showed that no excystation occurred in formaldehyde-fixed oocysts. This confirmed that oocyst wall permeability, rather than metabolic activity potential, was the basis of the dye permeability viability assessment. A previously developed protocol (L. J. Anguish and W. C. Ghiorse, Appl. Environ. Microbiol. 63 (7)24-733, 1997) for determining viability of oocysts in soil and sediment was used to examine further the use of oocyst permeability status as an indicator of oocyst viability in fecal material stored at 4°C and in water at various temperatures. Most of the oocysts in fresh calf feces were found to be impermeable to the fluorochromes. They were also capable of excystation, as indicated by the in vitro excystation assay, and were infective, as indicated by a standard mouse infectivity assay. The dye permeability assay further showed that an increase in the intermediate population of oocysts permeable to DAPI but not to PI occurred over time. There was also a steady population of oocysts permeable to both dyes. Further experiments with purified oocysts suspended in distilled water showed that the shift in oocyst populations from impermeable to partially permeable to fully permeable was accelerated at temperatures above 4°C. This sequence of oocyst permeability changes was taken as an indicator of the oocyst inactivation pathway. Using the dye permeability results, inactivation rates of oocysts in two fecal pools stored in the dark at 4°C for 410 and 259 days were estimated to be 0.0040 and 0.0056 oocyst day-1, respectively. The excystation assay gave similar inactivation rates of 0.0046 and 0.0079 oocyst day-1. These results demonstrate the utility of the dye permeability assay as an indicator of potential viability and infectivity of oocysts, especially when combined with improved microscopic methods for detection of oocysts in soil, turbid water, and sediments.

He, L.M. and Tebo, B.M. (1998), Surface charge properties of and Cu(II) adsorption by spores of the marine *Bacillus* sp. strain SG-1. *Applied and Environmental Microbiology*, **64** (3), 1123-1129.

Full Text: [A\App Env Mic64, 1123.pdf](A/App%20Env%20Mic64,%201123.pdf)

Abstract: Spores of marine *Bacillus* sp. strain SG-1 are capable of oxidizing Mn(II) and Co(II), which results in the precipitation of Mn(III, IV) and Co(III) oxides and hydroxides on the spore surface.The spores also bind other heavy metals; however, little is knownabout the mechanism and capacity of this metal binding. In thisstudy the characteristics of the spore surface and Cu(II) adsorptionto this surface were investigated. The specific surface area of wet SG-1 spores was 74.7 m2 per g of dry weight as measured by the Methylene blue adsorptionmethod. This surface area is 11-fold greater than the surfacearea of dried spores, as determined with an N2 adsorption surfacearea analyzer or as calculated from the spore dimensions, suggestingthat the spore surface is porous. The surface exchange capacityas measured by the proton exchange method was found to be 30.6 µmol m-2, which is equal to a surface site density of 18.3 sites nm-2. The SG-1 spore surface charge characteristics were obtainedfrom acid-base titration data. The surface charge density variedwith pH, and the zero point of charge was pH 4.5. The titrationcurves suggest that the spore surface is dominated by negativelycharged sites that are largely carboxylate groups but also phosphategroups. Copper adsorption by SG-1 spores was rapid and completewithin minutes. The spores exhibited a high affinity for Cu(II).The amounts of copper adsorbed increased from negligible at pH3 to maximum levels at pH >6. Their great surface area, site density, and affinity give SG-1 spores a high capability for binding metalson their surfaces, as demonstrated by our experiments with Cu(II).

Eckner, K.F. (1998), Comparison of membrane filtration and multiple-tube fermentation by the Colilert and Enterolert methods for detection of waterborne coliform bacteria, *Escherichia* coli, and enterococci used in drinking and bathing water quality monitoring in southern Sweden. *Applied and Environmental Microbiology*, **64** (8), 3079-3083.

Full Text: [A\App Env Mic64, 3079.pdf](A/App%20Env%20Mic64,%203079.pdf)

Abstract: A total of 338 water samples, 261 drinking water samples and 77 bathing water samples, obtained for routine testing were analyzed in duplicate by Swedish standard methods using multiple-tube fermentation or membrane filtration and by the Colilert and/or Enterolert methods. Water samples came from a wide variety of sources in southern Sweden (Skane). The Colilert method was found to be more sensitive than Swedish standard methods for detecting coliform bacteria and of equal sensitivity for detecting *Escherichia* coli when all drinking water samples were grouped together. Based on these results, Swedac, the Swedish laboratory accreditation body, approved for the first time in Sweden use of the Colilert method at this laboratory for the analysis of all water sources not falling under public water regulations (A-krav), The coliform detection study of bathing water yielded anomalous results due to confirmation difficulties, E, coli detection in bathing water was similar by both the Colilert and Swedish standard methods as was fecal streptococcus and *Enterococcus* detection by both the Enterolert and Swedish standard methods.

Keywords: Beta-D-Galactosidase, National Field-Evaluation, Defined Substrate Method, Identification, Interference, Assays

Pazirandeh, M., Wells, B.M. and Ryan, R.L. **(**1998**),** Development of bacterium-based heavy metal biosorbents: Enhanced uptake of cadmium and mercury by *Escherichia coli* expressing a metal binding motif. *Applied and Environmental Microbiology*, **64** (10), 4068-4072.

Full Text: [A\App Env Mic64, 4068.pdf](A/App%20Env%20Mic64,%204068.pdf)

Abstract: A gene coding for a de novo peptide sequence containing a metal binding motif was chemically synthesized and expressed in*Escherichia coli* as a fusion with the maltose binding protein.Bacterial cells expressing the metal binding peptide fusion demonstratedenhanced binding of Cd2+ and Hg2+ compared to bacterial cells lacking the metal binding peptide.The potential use of genetically engineered bacteria as biosorbentsfor the removal of heavy metals from wastewaters is discussed.

Medema, G.J., Schets, F.M., Teunis, P.F.M. and Havelaar, A.H. (1998), Sedimentation of free and attached *Cryptosporidium oocysts* and *Giardia cysts* in water. *Applied and Environmental Microbiology*, **64** (11), 4460-4466.

Full Text: [A\App Env Mic64, 4460.pdf](A/App%20Env%20Mic64,%204460.pdf)

Abstract: Experimental analysis of the sedimentation velocity of *Cryptosporidium parvum* oocysts and *Giardia lamblia* cysts was compared with mathematical description of their sedimentation velocities by using measurements of (oo)cyst size and density and the density and viscosity of the sedimentation medium to determine if the sedimentation kinetics of freely suspended oocysts of *C. parvum* and cysts of G. lamblia can be described by Stokes’ law. The theoretically calculated sedimentation kinetics showed a good agreement with the experimentally observed kinetics. Both showed a decline in sedimentation velocity over time, caused primarily by variation in (oo)cyst density. The initial apparent sedimentation velocities in Hanks balanced salt solution at 23°C was 0.35 micron . s-1 for oocysts and 1.4 micron . s-1 for cysts. (Oo)cysts that enter the surface water environment by discharges of biologically treated sewage may be attached to sewage particles, and this will affect their sedimentation kinetics. Therefore, (oo)cysts were mixed with settled secondary effluent. (Oo)cysts readily attached to the (biological) particles in effluent; 30% of both cysts and oocysts attached during the first minutes of mixing, and this fraction increased to approximately 75% after 24 h. The sedimentation velocity of (oo)cysts attached to secondary effluent particles increased with particle size and was (already in the smallest size fraction [1 to 40 micron]) determined by the sedimentation kinetics of the effluent particles. The observed sedimentation velocities of freely suspended (oo)cysts are probably too low to cause significant sedimentation in surface water or reservoirs. However, since a significant proportion of both cysts and oocysts attached readily to organic biological particles in secondary effluent, sedimentation of attached (oo)cysts after discharge into surface water will probably be a significant factor in the environmental ecology of *C. parvum* and G. lamblia. Attachment to particles influences not only sedimentation of (oo)cysts in surface water but also their behavior in drinking water treatment processes.

Liu, M.H., Gonzalez, J.E., Willis, L.B. and Walker, G.C. (1998), A novel screening method for isolating exopolysaccharide-deficient mutants. *Applied and Environmental Microbiology*, **64** (11), 4600-4602.

Full Text: [A\App Env Mic64, 4600.pdf](A/App%20Env%20Mic64,%204600.pdf)

Abstract: A screening method based on differential staining of the wild type and exopolysaccharide-deficient mutants of Rhizobium (Sinorhizobium) meliloti by the lipophilic dye Sudan Black B is described. Mutants defective in the production of either succinoglycan or EPS II (galactoglucan) were isolated by using this method, which might also prove useful for isolating exopolysaccharide-defective derivatives of other bacteria.

Keywords: Calcofluor-Binding Exopolysaccharide, Rhizobium-Meliloti, Structural Elucidation, Alcaligenes-Eutrophus, Symbiotic Function, Repeating-Unit, Succinoglycan, Genes, Biosynthesis, Plant

Nelson, Y.M., Lion, L.W., Ghiorse, W.C. and Shuler, M.L. (1999**),** Production of biogenic Mn oxides by *Leptothrix discophora* SS-1 in a chemically defined growth medium and evaluation of their Pb adsorption characteristics. *Applied and Environmental Microbiology*, **65** (1), 175-180.

Full Text: [A\App Env Mic65, 175.pdf](A/App%20Env%20Mic65,%20175.pdf)

Abstract: Biogenic Mn oxides were produced by the bacterium *Leptothrix discophora* SS-1 (= ATCC 3182) in a chemically defined mineralsalts medium, and the Pb binding and specific surface area of these oxides were characterized. Growth of SS-1 in the definedmedium with pyruvate as a carbon and energy source required theaddition of vitamin B12. Complete oxidation of Mn(II) within 60 h required the addition of ≥ 0.1 µM FeSO4. Pb adsorption isothermswere determined for the biogenic Mn oxides (and associated cellswith their extracellular polymer) and compared to the Pb adsorptionisotherms of cells and exopolymer alone, as well as to abioticMn oxides. The Pb adsorption to cells and exopolymer with biogenicMn oxides (0.8 mmol of Mn per g) at pH 6.0 and 25°C was 2 orders of magnitude greater than the Pb adsorption to cells and exopolymeralone (on a dry weight basis). The Pb adsorption to the biogenicMn oxide was two to five times greater than the Pb adsorptionto a chemically precipitated abiotic Mn oxide and several orders of magnitude greater than the Pb adsorption to two commerciallyavailable crystalline MnO2 minerals. The N2 Brunauer-Emmet-Tellerspecific surface areas of the biogenic Mn oxide and fresh Mn oxideprecipitate (224 and 58 m2/g, respectively) were significantly greater than those of thecommercial Mn oxide minerals (0.048 and 4.7 m2/g). The Pb adsorption capacity of the biogenic Mn oxide alsoexceeded that of a chemically precipitated colloidal hydrous Feoxide under similar solution conditions. These results show thatamorphous biogenic Mn oxides similar to those produced by SS-1may play a significant role in the control of trace metal phasedistribution in aquaticsystems.

Waage, A.S., Vardund, T., Lund, V. and Kapperud, G. (1999), Detection of small numbers of *Campylobacter jejuni* and *Campylobacter coli* cells in environmental water, sewage, and food samples by a seminested PCR assay. *Applied and Environmental Microbiology*, **65** (4), 1636-1643.

Full Text: [A\App Env Mic65, 1636.pdf](A/App%20Env%20Mic65,%201636.pdf)

Abstract: A rapid and sensitive assay was developed for detection of small numbers of *Campylobacter jejuni* and *Campylobacter coli* cells in environmental water, sewage, and food samples. Water and sewage samples were filtered, and the filters were enriched overnight in a nonselective medium. The enrichment cultures were prepared for PCR by a rapid and simple procedure consisting of centrifugation, proteinase K treatment, and boiling. A seminested PCR based on specific amplification of the intergenic sequence between the two *Campylobacter* flagellin genes, flaA and flaB, was performed, and the PCR products were visualized by agarose gel electrophoresis. The assay allowed us to detect 3 to 15, C.F., U of C. jejuni per 100 ml in water samples containing a background flora consisting of up to 8, 700 heterotrophic organisms per ml and 10,000, C.F., U of coliform bacteria per 100 ml. Dilution of the enriched cultures 1 (10 with sterile broth prior to the PCR was sometimes necessary to obtain positive results. The assay was also conducted with food samples analyzed with or without overnight enrichment. As few as

Halden, R.U., Halden, B.G. and Dwyer, D.F. (1999), Removal of dibenzofuran, dibenzo-p-dioxin, and 2-chlorodibenzo-p-dioxin from soils inoculated with *Sphingomonas* sp. strain RW1.. *Applied and Environmental Microbiology*, **65** (5), 2246-2249.

Full Text: [A\App Env Mic65, 2246.pdf](A/App%20Env%20Mic65,%202246.pdf)

Abstract: Removal of dibenzofuran, dibenzo-*p*-dioxin, and 2-chlorodibenzo-*p*-dioxin (2-CDD) (10 ppm each) from soil microcosms to finalconcentrations in the parts-per-billion range was affected bythe addition of *Sphingomonas* sp. strain RW1. Rates and extents of removal were influenced by the density of RW1 organisms. For2-CDD, the rate of removal was dependent on the content of soilorganic matter (SOM), with half-life values ranging from 5.8 h(0% SOM) to 26.3 h (5.5%SOM).

Divizia, M., Palombi, L., Buonomo, E., Donia, D., Ruscio, V., Equestre, M., Leno, L., Panà, A. and Degener, A.M. (1999), Genomic characterization of human and environmental polioviruses isolated in Albania. *Applied and Environmental Microbiology*, **65** (8), 3534-3539.

Full Text: [A\App Env Mic65, 3534.pdf](A/App%20Env%20Mic65,%203534.pdf)

Abstract: Between April and December 1996, a serious outbreak of poliomyelitis occurred in Albania; almost 140 subjects were involved, and the episode presented an unusually high mortality rate (12%). During the outbreak, water samples from the Lana River in Tirana, Albania, and stool samples from two cases of paralytic poliomyelitis were collected and analyzed for the presence of polioviruses. Six polioviruses were isolated from the environmental and human samples, according to standard methods. All the samples were characterized by partial genomic sequencing of 330 bases across the 5’ untranslated region (5’-UTR) (nucleotide positions 200 to 530) and of 300 bases across the VP1 region (nucleotide positions 2474 to 2774). Comparison of these sequences with those present in data banks permitted the identification of environmental isolates Lana A and Lana B as, respectively, a Sabin-like type 2 poliovirus and an intertypic recombinant poliovirus (Sabin-like type 2/wild type 1), both bearing a G instead of an A at nucleotide position 481. The two other environmental polioviruses were similar to the isolates from the paralytic cases. They were characterized by a peculiar 5’-UTR and by a VP1 region showing 98% homology with the Albanian epidemic type 1 isolates reported by other authors. This study confirms the environmental circulation in Albania of recombinant poliovirus strains, likely sustained by a massive vaccination effort and by the presence in the environment of a type 1 poliovirus, as isolated from the Lana River in Tirana about 2 months before the first case of symptomatic acute flaccid paralysis was reported in this town.

Rockabrand, D., Austin, T., Kaiser, R. and Blum, P. (1999), Bacterial growth state distinguished by single-cell protein profiling: Does chlorination kill coliforms in municipal effluent? *Applied and Environmental Microbiology*, **65** (9), 4181-4188.

Full Text: [A\App Env Mic65, 4181.pdf](A/App%20Env%20Mic65,%204181.pdf)

Abstract: Municipal effluent is the largest reservoir of human enteric bacteria. Its public health significance, however, depends upon the physiological status of the wastewater bacterial community. A novel immunofluorescence assay was developed and used to examine the bacterial growth state during wastewater disinfection. Quantitative levels of three highly conserved cytosolic proteins (DnaK, Dps, and Fis) were determined by using enterobacterium-specific antibody fluorochrome-coupled probes. Enterobacterial Fis homologs were abundant in growing cells and nearly undetectable in stationary-phase cells. In contrast, enterobacterial Dps homologs were abundant in stationary-phase cells but virtually undetectable in growing cells. The range of variation in the abundance of both proteins was at least 100-fold as determined by Western blotting and immunofluorescence analysis. Enterobacterial DnaK homologs were nearly invariant with growth state, enabling their use as permeabilization controls. The cellular growth states of individual enterobacteria in wastewater samples were determined by measurement of Fis, Dps, and DnaK abundance (protein profiling). Intermediate levels of Fis and Dps were evident and occurred in response to physiological transitions. The results indicate that chlorination failed to kill coliforms but rather elicited nutrient starvation and a reversible nonculturable state. These studies suggest that the current standard procedures for wastewater analysis which rely on detection of culturable cells likely underestimate fecal coliform content.

Manero, A. and Blanch, A.R. (1999), Identification of *Enterococcus* spp. with a biochemical key. *Applied and Environmental Microbiology*, **65** (10), 4425-4430.

Full Text: [A\App Env Mic65, 4425.pdf](A/App%20Env%20Mic65,%204425.pdf)

Abstract: A six-step biochemical key is presented for the identification of all recognized *Enterococcus* spp. The key consists of 12 tests, but no more than 6 are needed for the most complicated identification. The reliability of the key has been evaluated with collection type strains and clinical and environmental isolates. This key has fewer tests than those reported in previous studies. There is no commercial kit that includes the whole set of tests. However, some of the tests are included in enzyme activity-based kits that could be used with the proposed key. The key is designed for use in routine applications, especially in environmental and clinical studies with a high number of isolates.

Keywords: Vancomycin-Resistant Enterococci, Sp-Nov, Genus *Enterococcus*, Human Infections, Drinking-Water, Comb-Nov, Streptococcus, Tests, Lactococci, Origin

Lodder, W.J., Vinjé, J., van De Heide, R., de Roda Husman, A.M., Leenen, E.J. and Koopmans, M.P. (1999), Molecular detection of Norwalk-like caliciviruses in sewage. *Applied and Environmental Microbiology*, **65** (12), 5624-5627.

Full Text: [A\App Env Mic65, 5624.pdf](A/App%20Env%20Mic65,%205624.pdf)

Abstract: In this study, Norwalk-like virus (NLV) RNA was detected by reverse transcriptase PCR (RT-PCR) in sewage water concentrates. Sequence analysis of the RT-PCR products revealed identical sequences in stools of patients and related sewage samples. In 6 of 11 outbreak-unrelated follow-up samples, multiple NLV genotypes were present. Levels as high as 107 RNA-containing particles per liter were found. These data show that high loads of NLVs may be present in sewage and warrant further studies addressing the efficacy of NLV removal by sewage water treatment processes.

Mattick, K.L., Jørgensen, F., Legan, J.D., Cole, M.B., Porter, J., Lappin-Scott, H.M. and Humphrey, T.J. (2000), Survival and filamentation of *Salmonella enterica* serovar enteritidis PT4 and *Salmonella enterica* serovar typhimurium DT104 at low water activity. *Applied and Environmental Microbiology*, **66** (4), 1274-1279.

Full Text: [A\App Env Mic66, 1274.pdf](A/App%20Env%20Mic66,%201274.pdf)

Abstract: In this study we investigated the long-term survival of and morphological changes in Salmonella strains at low water activity (a (w)). Salmonella enterica serovar Enteritidis PT4 and Salmonella enterica serovar Typhimurium DT104 survived at low a (w) for long periods, but minimum humectant concentrations of 8% NaCl (a (w), 0. 95), 96% sucrose (a (w), 0.94), and 32% glycerol (a (w), 0.92) were bactericidal under most conditions. Salmonella rpoS mutants were usually more sensitive to bactericidal levels of NaCl, sucrose, and glycerol. At a lethal a (w), incubation at 37°C resulted in more rapid loss of viability than incubation at 21°C. At a (w) values of 0.93 to 0.98, strains of, S. enterica serovar Enteritidis and, S.enterica serovar Typhimurium formed filaments, some of which were at least 200 microm long. Filamentation was independent of rpoS expression. When the preparations were returned to high-a (w) conditions, the filaments formed septa, and division was complete within approximately 2 to 3 h. The variable survival of Salmonella strains at low a (w) highlights the importance of strain choice when researchers produce modelling data to simulate worst-case scenarios or conduct risk assessments based on laboratory data. The continued increase in Salmonella biomass at low a (w) (without a concomitant increase in microbial count) would not have been detected by traditional microbiological enumeration tests if the tests had been performed immediately after low-a (w) storage. If Salmonella strains form filaments in food products that have low a (w) values (0.92 to 0.98), there are significant implications for public health and for designing methods for microbiological monitoring.

Baudart, J., Lemarchand, K., Brisabois, A. and Lebaron, P. (2000), Diversity of Salmonella strains isolated from the aquatic environment as determined by serotyping and amplification of the ribosomal DNA spacer regions. *Applied and Environmental Microbiology*, **66** (4), 1544-1552.

Full Text: [A\App Env Mic66, 1544.pdf](A/App%20Env%20Mic66,%201544.pdf)

Abstract: Salmonella species are pathogenic bacteria often detected in sewage, freshwater, marine coastal water, and groundwater. Salmonella spp. can survive for long periods in natural waters, and the persistence of specific and epidemic strains is of great concern in public health. However, the diversity of species found in the natural environment remains unknown. The aim of this study was to investigate the diversity of Salmonella strains isolated from different natural aquatic systems within a Mediterranean coastal watershed (river, wastewater, and marine coastal areas). A total of 574 strains isolated from these natural environments were identified by both conventional serotyping and the ribosomal spacer-heteroduplex polymorphism (RS-HP) method (M. A. Jensen and N. Straus, PCR Methods Appl. 3 (186-194, 1993). More than 40 different serotypes were found, and some serotypes probably mobilized from widespread animal-rearing activities were detected only during storm events. These serotypes may be good indicators of specific contamination sources. Furthermore, the RS-HP method based on the PCR amplification of the intergenic spacer region between the 16S and 23S rRNA genes can produce amplicon profiles allowing the discrimination of species at both serotype and intraserotype levels. This method represents a powerful tool that could be used for rapid typing of Salmonella isolates.

Tauber, M.M., Cavaco-Paulo, A., Robra, K.H. and Gübitz, G.M. (2000), Nitrile hydratase and amidase from *Rhodococcus rhodochrous* hydrolyze acrylic fibers and granular polyacrylonitriles. *Applied and Environmental Microbiology*, **66** (4), 1634-1638.

Full Text: [A\App Env Mic66, 1634.pdf](A/App%20Env%20Mic66,%201634.pdf)

Abstract: Rhodococcus rhodochrous NCIMB 11216 produced nitrile hydratase (320 nkat mg of rotein-1) and amidase activity (38.4 nkat mg of protein-1) when grown on a medium containing propionitrile. These enzymes sere able to hydrolize nitrile groups of both granular polyacrylonitriles (PAN) and acrylic fibers, Nitrile groups of PAN40 (molecular mass, 40 kDa) and PAN190 (molecular mass, 190 kDa) were converted into the corresponding carbonic acids to 1.8 and 1.0%, respectively. In contrast, surfacial nitrile groups of acrylic fibers were only converted to the corresponding amides. X-ray photoelectron spectroscopy analysis showed that 16% of the surfacial nitrile groups were hydrolyzed by the R. rhodochrous enzymes, Due to the enzymatic modification, the acrylic fibers became more hydrophilic and thus, adsorption of dyes was enhanced, This was indicated by a 15% increase in the staining level (K/S value) for C.I. Basic Blue 9.

Keywords: Industrial-Production, J1, Biotechnology, NCIMB-11216, Cellulases, Acrylamide, Acid

? Nakari-Setälä, T., Azeredo, J., Henriques, M., Oliveira, R., Teixeira, J., Linder, M. and Penttila, M. (2002), Expression of a fungal hydrophobin in the Saccharomyces cerevisiae cell wall: Effect on cell surface properties and immobilization. *Applied and Environmental Microbiology*, **68** (7), 3385-3391.

Full Text: [2002\App Env Mic68, 3385.pdf](2002/App%20Env%20Mic68,%203385.pdf)

Abstract: The aim of this work was to modify the cell surface properties of Saccharomyces cerevisiae by expression of the HFBI hydrophobin of the filamentous fungus Trichoderma reesei on the yeast cell surface. The second aim was to study the immobilization capacity of the modified cells. Fusion to the Flo1p flocculin was used to target the HFBI moiety to the cell wall. Determination of cell surface characteristics with contact angle and zeta potential measurements indicated that HFBI-producing cells are more apolar and slightly less negatively charged than the parent cells. Adsorption of the yeast cells to different commercial supports was studied. A twofold increase in the binding affinity of the hydrophobin-producing yeast to hydrophobic silicone-based materials was observed, while no improvement in the interaction with hydrophilic carriers could be seen compared to that of the parent cells. Hydrophobic interactions between the yeast cells and the support are suggested to play a major role in attachment. Also, a slight increase in the initial adsorption rate of the hydrophobin yeast was observed. Furthermore, due to the engineered cell surface, hydrophobin-producing yeast cells were efficiently separated in an aqueous two-phase system by using a nonionic polyoxyethylene detergent, C12-18EO5.

Keywords: Adhesion, Adsorption, Adsorption Rate, Attachment, Candida-Albicans, Capacity, Contact, Contact Angle, Fungus, Fusion, Hydrophilic, Hydrophobic, Immobilization, Interaction, Interactions, Layer, Modified, Parent, Play, Protein, Saccharomyces Cerevisiae, Support, Surface, Work, Yeast, Yeast Flocculation, Zeta Potential

? Smith, C.A. and Hyman, M.R. (2004), Oxidation of methyl tert-butyl ether by alkane hydroxylase in dicyclopropylketone-induced and n-octane-grown *Pseudomonas putida* GPo1. *Applied and Environmental Microbiology*, **70** (8), 4544-4550.

Full Text: [2004\App Env Mic70, 4544.pdf](2004/App%20Env%20Mic70,%204544.pdf)

Abstract: The alkane hydroxylase enzyme system in Pseudomonas putida GPo1 has previously been reported to be unreactive toward the gasoline oxygenate methyl tert-butyl ether (MTBE). We have reexamined this finding by using cells of strain GPo1 grown in rich medium containing dicyclopropyl ketone (DCPK), a potent gratuitous inducer of alkane hydroxylase activity. Cells grown with DCPK oxidized MTBE and generated stoichiometric quantities of tert-butyl alcohol (TBA). Cells grown in the presence of DCPK also oxidized tert-amyl methyl ether but did not appear to oxidize either TBA, ethyl tert-butyl ether, or tert-amyl alcohol. Evidence linking MTBE oxidation to alkane hydroxylase activity was obtained through several approaches. First, no TBA production from MTBE was observed with cells of strain GPo1 grown on rich medium without DCPK. Second, no TBA production from MTBE was observed in DCPK-treated cells of P. putida GPo12, a strain that lacks the alkane-hydroxylase-encoding OCT plasmid. Third, all n-alkanes that support the growth of strain GPo1 inhibited MTBE oxidation by DCPK-treated cells. Fourth, two non-growth-supporting n-alkanes (propane and n-butane) inhibited MTBE oxidation in a saturable, concentration-dependent process. Fifth, 1,7-octadiyne, a putative mechanism-based inactivator of alkane hydroxylase, fully inhibited TBA production from MTBE. Sixth, MTBE-oxidizing activity was also observed in n-octane-grown cells. Kinetic studies with strain GPo1 grown on n-octane or rich medium with DCPK suggest that MTBE-oxidizing activity may have previously gone undetected in n-octane-grown cells because of the unusually high K-s value (20 to 40 mM) for MTBE.

Keywords: Activity, Aeruginosa, Alcohol, Alkb, Biodegradation, Cells, Cometabolism, Degrading Bacteria, Enzyme, Gasoline, Growth, Henrys Law Constants, Induction, Ketone, Monooxygenase, Mtbe, N-Alkanes, N-Butane, Oleovorans, Oxidation, P, Plasmid, Process, Production, Pseudomonas, Pseudomonas Putida, Strains, Support, Tert-Butyl Alcohol

? Strotmann, U., Reuschenbach, P., Schwarz, H. and Pagga, U. (2004), Development and evaluation of an online CO2 evolution test and a multicomponent biodegradation test system. *Applied and Environmental Microbiology*, **70** (8), 4621-4628.

Full Text: [2004\App Env Mic70, 4621.pdf](2004/App%20Env%20Mic70,%204621.pdf)

Abstract: Well-established biodegradation tests use biogenously evolved carbon dioxide (CO2) as an analytical parameter to determine the ultimate biodegradability of substances. A newly developed analytical technique based on the continuous online measurement of conductivity showed its suitability over other techniques. It could be demonstrated that the method met all criteria of established biodegradation tests, gave continuous biodegradation curves, and was more reliable than other tests. In parallel experiments, only small variations in the biodegradation pattern occurred. When comparing the new online CO2 method with existing CO2 evolution tests, growth rates and lag periods were similar and only the final degree of biodegradation of aniline was slightly lower. A further test development was the unification and parallel measurement of all three important summary parameters for biodegradation-i.e., CO2 evolution, determination of the biochemical oxygen demand (BOD), and removal of dissolved organic carbon (DOC)-in a multicomponent biodegradation test system (MCBTS). The practicability of this test method was demonstrated with aniline. This test system had advantages for poorly water-soluble and highly volatile compounds and allowed the determination of the carbon fraction integrated into biomass (heterotrophic yield). The integrated online measurements of CO, and BOD systems produced continuous degradation curves, which better met the stringent criteria of ready biodegradability (60% biodegradation in a 10-day window). Furthermore the data could be used to calculate maximal growth rates for the modeling of biodegradation processes.

Keywords: Activated-Sludge, Aniline, Bacteria, Biochemical, Biodegradability, Biodegradation, Biomass, Bod, Carbon, Carbon Dioxide, Carbon Fraction, Carbon-Dioxide, CO, CO2, CO2 Evolution, Conductivity, Degradation, Determination, Development, Dissolved, Dissolved Organic Carbon, Evaluation, Evolution, Growth, Growth Kinetic-Parameters, Growth Rates, Heterotrophic, Measurement, Measurements, Modeling, Multicomponent, Organic, Organic Carbon, Oxygen, Oxygen Demand, Packaging Materials, Parameters, Pseudomonas-Fluorescens, Removal, Soil, Sturm Test, Survival, Techniques, Test, Test Development, Tests, Volatile, Volatile Compounds, Yield

? Liong, M.T. and Shah, N.P. (2005), Optimization of cholesterol removal by probiotics in the presence of prebiotics by using a response surface method. *Applied and Environmental Microbiology*, **71** (4), 1745-1753.

Full Text: [2005\App Env Mic71, 1745.pdf](2005/App%20Env%20Mic71,%201745.pdf)

Abstract: Lactobacillus casei ASCC 292 was grown in the presence of six prebiotics, namely, sorbitol, mannitol, maltodextrin, high-amylose maize, fructooligosaccharide (FOS), and inulin, in order to determine the combination of probiotic and prebiotics that would remove the highest level of cholesterol. A first-order model showed that the combination of L. casei ASCC 292, FOS, and maltodextrin was the most efficient for the removal of cholesterol, and the optimum experimental region was developed by using the steepest ascent. This led to the middle points of probiotic (1.70% [wt/vol]), FOS (4.80% [wt/vol]), and maltodextrin (6.80% [wt/vol]) for the development of a central composite design for optimization. Perturbation,plot, response surface, and coefficient estimates showed that all three factors had significant quadratic effects on cholesterol removal, with FOS showing the most conspicuous quadratic change. A second-order polynomial regression model estimated that the optimum condition of the factors for cholesterol removal by L. casei ASCC 292 is 1.71% (wt/vol) probiotic, 4.95% (wt/vol) FOS, and 6.62% (wt/vol) maltodextrin. Validation experiments showed that the predicted optimum conditions were more efficient than the high and low levels of the factors and the center points. A response surface. method proved reliable for developing the model, optimizing factors, and analyzing interaction effects. Analyses of growth, substrate utilization, growth yield, mean doubling time, and short-chain fatty acid (SCFA) production by the use of quadratic models indicated that cholesterol removal was growth associated. The concentration of L. casei ASCC 292 had the most significant quadratic effect on all responses studied, except for substrate utilization and SCFA production, which were significantly (P < 0.05) influenced by the interactions between the probiotic and both prebiotics, indicating that they were closely associated with the uptake of prebiotics.

Keywords: Skim Milk, In-Vitro, Growth, Oligosaccharides, Bifidobacterium, Metabolism, Viability, Bacteria, Acid

? Nozawa-Inoue, M., Scow, K.M. and Rolston, D.E. (2005), Reduction of perchlorate and nitrate by microbial communities in vadose soil. *Applied and Environmental Microbiology*, **71** (7), 3928-3934.

Full Text: [2005\App Env Mic71, 3928.pdf](2005/App%20Env%20Mic71,%203928.pdf)

Abstract: Perchlorate contamination is a concern because of the increasing frequency of its detection in soils and groundwater and its presumed inhibitory effect on human thyroid hormone production. Although significant perchlorate contamination occurs in the vadose (unsaturated) zone, little is known about perchlorate biodegradation potential by indigenous microorganisms in these soils. We measured the effects of electron donor (acetate and hydrogen) and nitrate addition on perchlorate reduction rates and microbial community composition in microcosm incubations of vadose soil. Acetate and hydrogen addition enhanced perchlorate reduction, and a longer lag period was observed for hydrogen (41 days) than for acetate (14 days). Initially, nitrate suppressed perchlorate reduction, but once perchlorate started to be degraded, the process was stimulated by nitrate. Changes in the bacterial community composition were observed in microcosms enriched with perchlorate and either acetate or hydrogen. Denaturing gradient gel electrophoresis analysis and partial sequencing of 16S rRNA genes recovered from these microcosms indicated that formerly reported perchlorate-reducing bacteria were present in the soil and that microbial community compositions were different between acetate- and hydrogen-amended microcosms. These results indicate that there is potential for perchlorate bioremediation by native microbial communities in vadose soil.

Keywords: (Per)Chlorate-Reducing Bacteria, Acetate, Alignment, Analysis, Bacteria, Bacterial Community Composition, Biodegradation, Bioremediation, Chlorate, Communities, Community, Community Composition, Composition, Contamination, Degradation, Effects, Electrophoresis, Gel, Gel Electrophoresis, Gel-Electrophoresis, Groundwater, Human, Hydrogen, Inhibitory Effect, Kinetics, Microbial, Microbial Communities, Microbial Community Composition, Microcosm, Microcosms, Microorganisms, Nitrate, Position, Process, Production, Reduction, Soil, Soils, Thyroid, Thyroid Hormone, Unsaturated, Vadose, Water

? Zille, A., Górnacka, B., Rehorek, A. and Cavaco-Paulo, A. (2005), Degradation of azo dyes by Trametes villosa laccase over long periods of oxidative conditions. *Applied and Environmental Microbiology*, **71** (11), 6711-6718.

Full Text: [2005\App Env Mic71, 6711.pdf](2005/App%20Env%20Mic71,%206711.pdf)

Abstract: Trametes villosa laccase was used for direct azo dye degradation, and the reaction products that accumulated after 72 h of incubation were analyzed. Liquid chromatography-mass spectrometry (LC-MS) analysis showed the formation of phenolic compounds during the dye oxidation process as well as a large amount of polymerized products that retain azo group integrity. The amino-phenol reactions were also investigated by 13 C-nuclear magnetic resonance and LC-MS analysis, and the polymerization character of laccase was shown. This study highlights the fact that laccases polymerize the reaction products obtained during long-term batch decolorization processes with azo dyes. These polymerized products provide unacceptable color levels in effluents, limiting the application of laccases as bioremediation agents.

Keywords: Agents, Analysis, Azo Dye, Azo Dyes, Batch, Biodegradation, Bioremediation, Color, Decolorization, Degradation, Direct Azo Dye, Dye, Dyes, Effluents, Enzymes, Formation, Group, Humic Substances, Irpex-Lacteus, Kinetic Investigations, Laccase, Levels, Long-Term, Magnetic, Magnetic Resonance, Methyl-Orange, Oxidation, Phenolic, Phenolic Compounds, Polymerization, Process, Products, Reaction, Resonance, Spectrometry, Synthetic Dyes, Textile Dyes, White-Rot Fungi

? Muller, R.H., Rohwerder, T. and Harms, H. (2007), Carbon conversion efficiency and limits of productive bacterial degradation of methyl tert-butyl ether and related compounds. *Applied and Environmental Microbiology*, **73** (6), 1783-1791.

Full Text: [2007\App Env Mic73, 1783.pdf](2007/App%20Env%20Mic73,%201783.pdf)

Abstract: The utilization of the fuel oxygenate methyl tert-hutyl ether (MTBE) and related compounds by microorganisms was investigated in a mainly theoretical study based on the Y-ATP concept. Experiments were conducted to derive realistic maintenance coefficients and K-s values needed to calculate substrate fluxes available for biomass production. Aerobic substrate conversion and biomass synthesis were calculated for different putative pathways. The results suggest that MTBE is an effective heterotrophic substrate that can sustain growth yields of up to 0.87 g g-1, which contradicts previous calculation results (N. Fortin et al., Environ. Microbiol. 3:407-416, 2001). Sufficient energy equivalents were generated in several of the potential assimilatory routes to incorporate carbon into biomass without the necessity to dissimilate additional substrate, efficient energy transduction provided. However, when a growth-related kinetic model was included, the limits of productive degradation became obvious. Depending on the maintenance coefficient in, and its associated biomass decay term b, growth-associated carbon conversion became strongly dependent on substrate fluxes. Due to slow degradation kinetics, the calculations predicted relatively high threshold concentrations, S-min, below which growth would not further be supported. S-min strongly depended on the maximum growth rate mu(max), and b and was directly correlated with the half maximum rate-associated substrate concentration K-s, meaning that any effect impacting this parameter would also change S-min. The primary metabolic step, catalyzing the cleavage of the ether bond in MTBE, is likely to control the substrate flux in various strains. In addition, deficits in oxygen as an external factor and in reduction equivalents as a cellular variable in this reaction should further increase K-s and S-min for MTBE.

# Title: Applied Geochemistry

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Sheppard, M.I., Thibault, D.H. and Smith, P.A. (1989), Iodine dispersion and effects on groundwater chemistry following a release to a peat bog, Manitoba, Canada. *Applied Geochemistry*, **4** (4), 423-432.

Full Text: [1989\App Geo4, 423.pdf](1989/App%20Geo4,%20423.pdf)

Abstract: The migration and behaviour of I was investigated in a sphagnum bog on the Precambrian Shield in eastern Manitoba, Canada. A 6 M solution of KI was released at the base of the bog to stimulate a pulse discharge of contaminated groundwater from a fracture in the granitic rock. A network of piezometer tubes was used to monitor the dispersion of the I and the groundwater chemistry over 1 year. Cores of peat were also taken for analysis to supplement the groundwater data and to investigate the sorption of I. The introduced I dispersed 2 m horizontally and 1 m vertically within a month. After this, the system stabilized and further migration was insignificant. The pattern of I dispersion indicated that the bog hydrology was very complex with flow directions changing substantially with depth. The groundwater concentrations of the major cations rose in response to the mass action effect of K displacing them from reaction sites in the peat. Humic materials in the groundwater decreased in size after the KI release and returned to their pre-release conformation one month later. The geometric mean soil distribution coefficient value, *Kd*, for I in the bog was 1.36l/kg, but it was strongly related to pore water concentration. Thus, a single *Kd* value was insufficient for describing the system. Clearly, good groundwater chemistry, sorption and hydrological data are necessary for meaningful modelling of contaminant transport in bogs.

Mielke, H.W. (1993), Lead dust contaminated U.S.A. communities: Comparison of Louisiana and Minnesota. *Applied Geochemistry*, **8** (3), 257-261.

Thornton, I. (1996), Impacts of mining on the environment: Some local, regional and global issues. *Applied Geochemistry*, **11** (1-2), 355-361.

Full Text: [A\App Geo11, 355.pdf](A/App%20Geo11,%20355.pdf)

Abstract: The mining, processing and utilisation of metals dates back to Roman times and earlier with extensive developments in many parts of the world by the eighteenth and nineteenth centuries. Many mineralised areas are no longer worked leaving a legacy of dereliction and contaminated land and drainage. This paper discusses the sources and dispersion of metals from mining and smelting activities, factors influencing their pathways into the foodchain and potential impacts on plant, animal and human health. The importance of mineral and chemical forms of metals in soils is discussed in relation to their bioavailability. Reference is made to research in the U.K., Greece and Brazil.

Brooks, S.C. and Herman, J.S. (1998), Rate and extent of cobalt sorption to representative aquifer minerals in the presence of a moderately strong organic ligand. *Applied Geochemistry*, **13** (1), 77-88.

Full Text: [A\App Geo13, 77.pdf](A/App%20Geo13,%2077.pdf)

Abstract: There is an increasing awareness that rate-limited sorption reactions can play an important role in the transport of solutes in groundwater. The rate and extent of reactions between aqueous metals and mineral surfaces are affected by many factors, including the temperature, the presence of organic chelating agents, and adsorbent mineralogy. Cobalt sorption was investigated in terms of temperature, citrate concentration, and silica sand surface coating. The kinetic sorption data were described well by two simultaneous second-order reactions. The results suggested that decreasing temperature or the presence of citrate resulted in a slower approach to equilibrium for Co sorption to the uncoated silica sand that contained small amounts of secondary minerals. Using the same sand coated with an amorphous Fe(III) oxide, increasing temperature or the presence of citrate resulted in a faster approach to equilibrium for Co sorption. The equilibrium adsorption isotherms were described well by a generalized two-layer surface complexation model. Citrate decreased the extent of Co sorption to the uncoated silica; the effect was most pronounced at low temperature. Conversely, citrate increased the extent of Co sorption to the Fe-coated silica. These results suggest that citrate decreased the rate and extent of adsorption to the uncoated silica through the formation of a stable anionic aqueous complex that has a lower affinity for the surface than Co2+. Conversely, the higher anion sorption capacity of the Fe-coated silica increased the rate and extent of Co sorption with citrate present, presumably through the formation of an organo-metallic ternary surface complex.

Fordyce, F.M., Zhang, G.D., Green, K. and Liu, X.P. (2000), Soil, grain and water chemistry in relation to human selenium: Responsive diseases in Enshi District, China. *Applied Geochemistry*, **15** (1), 117-132.

Full Text: [A\App Geo15, 117.pdf](A/App%20Geo15,%20117.pdf)

Abstract: Selenium deficiency (Keshan Disease) and toxicity diseases in humans occur within 20 km of each other in Enshi District in China and have been linked to environmental levels of Se. Low concentrations of Se are associated with Jurassic siltstones and sandstones, whereas high concentrations occur in areas underlain by Permian carbonaceous strata. Although these broad relationships between Se in the environment and the human population have been established previously, not all villages underlain by the carbonaceous strata suffer Se toxicity problems and the precise controls on Se distribution and availability have not been quantified. In the present study, soil, grain, drinking water and human hair samples are examined to determine the controls on Se availability in 3 Se environments in Enshi District. Five low-Se and Keshan Disease villages, 5 high-Se and no toxicity villages and 5 high-Se and toxicity villages were selected for the study. Results show that the majority of samples in the low-Se villages are deficient or marginal in Se, and that Se availability to plants is inhibited by adsorption onto organic matter and Fe oxyhydroxides in soil. Therefore, remediation strategies involving the application of Se fertiliser direct to the soil may not increase plant Se levels as expected. In the high-Se villages, localised lithological variations result in considerable ranges in Se concentrations in all sample types. Deficient and excessive levels of Se are recorded in samples from the same village. Selenium bioavailability in the high-Se toxicity villages is controlled by the total soil Se concentration and pH. A greater proportion of the Se is plant available in villages where the carbonaceous strata are interbedded with limestone. Villagers should be advised to avoid planting crops in these areas if possible. (C) 1999 Elsevier Science Ltd. All rights reserved.

Tempel, R.N., Shevenell, L.A., Lechler, P. and Price, J. (2000), Geochemical modeling approach to predicting arsenic concentrations in a mine pit lake. *Applied Geochemistry*, **15** (4), 475-492.

Full Text: [A\App Geo15, 475.pdf](A/App%20Geo15,%20475.pdf)

Abstract: Between 1968 and 1983, the North pit at the Getchell Mine, Humboldt County, NV, filled with water to form a lake. In 1983, water quality data were collected with the following results: As concentrations of 0.29 to 0.59 mg/L, pH of 7.1 to 7.9, SO4-concentrations of 1490 to 1640 mg/L, and TDS of 2394 to 2500 mg/L. Using geochemical modeling techniques presented here, pit lake waters have been theoretically allowed to react for 8.5 a, the approximate time that the North pit had been completely full by 1983. Modeling results predict pH of 7.9 to 8.2, SO4 concentrations of 1503 to 1644 mg/L, TDS of 2054 to 2365 mg/L, and As concentrations ranging from 0.57 in the hypolimnion to 96 mg/L in the epilimnion. In the epilimnion, model results do not match observed As concentrations, suggesting that mechanisms, such as precipitation of arsenate salts or adsorption to mineral surfaces, may control As levels in an actual pit lake system. Adsorption to Fe oxyhydroxide surfaces is questioned by the authors because of the low Fe content in the Getchell system, but adsorption to Al(OH)3 (gibbsite) and clay mineral surfaces may be important in controlling natural As concentrations. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Kaolinite Dissolution, CO2-Water Systems, Kinetics, Stability, pH, 60-Degrees-C, 80-Degrees-C, FeAsO4.2H2O, Equilibrium, Adsorption

Douglas, G.B. and Adeney, J.A. (2000), Diagenetic cycling of trace elements in the bottom sediments of the Swan River Estuary, Western Australia. *Applied Geochemistry*, **15** (5), 551-566.

Full Text: [A\App Geo15, 551.pdf](A/App%20Geo15,%20551.pdf)

Abstract: Teflon strips were used in-situ in the bottom sediments at two sites in the Swan River Estuary to collect diagenetic Fe-Mn oxyhydroxides and monitor monthly changes in their morphology and trace element geochemistry. This study demonstrates that substantial concentrations of trace elements accumulate at the redox front during the formation of diagenetic Fe-Mn oxyhydroxides. It is likely that the Fe-Mn oxyhydroxides initially nucleate and grow on the Teflon strips via bacterial activity. Trace element geochemistry of the diagenetic Fe-Mn oxyhydroxides is influenced by changes in the supply of trace elements from either the bottom sediments and/or water column or changes in the physico-chemical status of bottom and porewaters. If sufficient diagenetic Fe-Mn oxyhydroxides are preserved in the upper layer (s) of the bottom sediment it is possible that diagenetic (secondary) trace element enrichment profiles may be produced which modify the historical input of natural or anthropogenic trace element sources. Alternatively, partial or complete dissolution of the diagenetic Fe-Mn oxyhydroxides in response to temporal changes in the redox status of the bottom sediment may lead to a substantial underestimate of trace element fluxes in historical bottom sediment profiles. This study highlights that considerable care must be taken when interpreting short-to long-term geochemical profiles in bottom sediments due to the possible occurrence of rapid, seasonally mediated diagenetic processes.

Keywords: Bivalve Anodonta-Grandis, Fresh-Water Sediments, Iron Oxyhydroxides, Metal Adsorption, Lake-Sediments, Surface, Cu, Zn, Cd, Mn

Glaus, M.A., Hummel, W. and Van Loon, L.R. (2000), Trace metal-humate interactions. I. Experimental determination of conditional stability constants. *Applied Geochemistry*, **15** (7), 953-973.

Full Text: [A\App Geo15, 953.pdf](A/App%20Geo15,%20953.pdf)

Abstract: The enhancement of mobility of radionuclides in the geosphere through complexation by humic substances is a source of uncertainty in performance assessment of radioactive waste repositories. Only very few data sets are available which are relevant for performance assessment of an underground repository for radioactive waste. Using the equilibrium dialysis-ligand exchange method developed at the Paul Scherrer Institut, conditional stability constants for the formation of complexes of Aldrich humic acid with Ca2+, NpO2+, Co2+, Ni2+, UO22+ and Eu3+ and complexes of Laurentian soil- and Suwannee River fulvic acid with Co2+, UO22+ and Eu3+ were measured. pH was varied between 5 and 10 and ionic strength between 0.02 and 0.2 M. The data are presented as equilibrium coefficients that are free from any model assumptions. The equilibrium coefficients increased in the order Ca2+ congruent to NpO2+ < Co2+ < Ni2+ < UO22+ < Eu3+. The quality of the data is assessed in an extended discussion of statistical and systematical errors, and by a critical ‘rereview’ of the auxiliary stability constants used for the calculation of the equilibrium coefficients. An approximate overall uncertainty of 0.5 log-units is estimated for the stability data reported. The conditional stability constants were found to increase markedly with increasing pH in the case of Co2+, UO22+ and Eu3+. For Ni2+, Ca2+ and NpO2+ this effect was less pronounced. For all metal ions tested, the influence of ionic strength was of less importance, and the conditional stability constants did not show a significant dependence on the type of humic substances investigated. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Dialysis-Ligand-Exchange, Humic-Acid, Ternary Complexes, Natural-Waters, Carbonic-Acid, Fulvic-Acids, Substances, Ions, Environments, Copper(II)

Hummel, W., Glaus, M.A. and Van Loon, L.R. (2000), Trace metal-humate interactions. II. The “conservative roof” model and its application. *Applied Geochemistry*, **15** (7), 975-1001.

Full Text: [A\App Geo15, 975.pdf](A/App%20Geo15,%20975.pdf)

Abstract: The modelling of metal-humate interactions has been a field of active research for more than 3 decades but despite all efforts there is still far from a consensus concerning humic binding models. The authors demonstrate that a synopsis of large sets of reliable experimental data for Ca, Co, Ni, Eu, Am, Cm, Np(V) and U(VI) reveals a consistent picture of the influence of metal concentration, pH and ionic strength on metal-humate interactions. However, this consistent behaviour cannot be interpreted with high numerical accuracy by simple binding models, the need for more adjustable parameters increases proportional to the width of the experimental parameter range to be fitted. This experience triggered the proposal of a pragmatic approach for performance assessment purposes. The “conservative roof” approach does not aim to accurately model all experimental data but rather allows estimates to be made of the maximum effects on metal complexation to be expected from humic substances. A specific “conservative roof” model is applied to situations generally to be expected in deep groundwater and selected cases of interest for planned Swiss repositories of radioactive waste are discussed in detail. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Actinide Ions Am3+, Humic-Acid, Stability-Constants, Fulvic-Acids, Complexation, Substances, Binding, Americium(III), Europium(III), Fluorescence

Wang, Y.X. and Reardon, E.J. (2001), Activation and regeneration of a soil sorbent for defluoridation of drinking water. *Applied Geochemistry*, **16** (5), 531-539.

Full Text: [A\App Geo16, 531.pdf](A/App%20Geo16,%20531.pdf)

Abstract: Geomaterials can be cost-effective sorbents for use in water treatment. In this study, a heavily-weathered Tertiary soil from Xinzhou. China was used as a sorbent for defluoridation of high-fluoride drinking water. The soil is composed of quartz, feldspar, illite and goethite? with an Fe oxide content of 6.75%. Batch and column experiments were done to characterize the F-removal properties and to develop an optimal activation and regeneration procedure. The soil can be regenerated following a simple base-acid rinsing procedure. This can be performed in situ, i.e., by passing the rinsing solutions directly through the treatment column. The same regeneration procedure can be used to activate the pristine soil. Fluoride sorption is described by a Freundlich isotherm model and the bulk of the uptake occurs within 1.5 h. Iron oxide coatings on soil particles and perhaps = FeOH surface groups at particle edges of illite grains are likely responsible for the soils F-sorption property. As collected in the field, the soil has a low permeability and is thus unsuitable for direct use in a flow-through column. Heat-treatment at 400-500 degreesC for 2 h, however, produces a granular and permeable sorbent. Although the soil’s sorption capacity (150 µg/g) is about a quarter of the low end range of values reported for commercially-available activated alumina, the sorption for F-is specific. A batch sorption experiment in the presence of Cl-, SO42-and HCO3-shows little or no competition from these other anions. (C) 2001 Published by Elsevier Science Ltd.

Keywords: Adsorption, Fluoride, Charge

Bunker, D.J., Smith, J.T., Livens, F.R. and Hilton, J. (2001), Kinetics of metal ion sorption on lake sediments: Approaches to the analysis of experimental data. *Applied Geochemistry*, **16** (6), 651-658.

Full Text: [A\App Geo16, 651.pdf](A/App%20Geo16,%20651.pdf)

Abstract: Two different mathematical techniques have been used to analyse data obtained from a set of experiments in which a range of radiotracers were sorbed onto two contrasting lake sediments. The advantages and disadvantages of the two techniques have been evaluated. Both approaches to the analysis were capable of providing rate parameters which can be used to determine the mobility and rate of removal of trace species from the water column. However, the values of the parameters were often different, depending upon which approach was used and, in some cases, even the number of sorption processes identified was method dependent. (C) 2001 Elsevier Science Ltd. All rights reserved.

Keywords: Model, Reversibility, Cesium, Illite

Halter, W.E. and Pfeifer, H.R. (2001), Arsenic(V) adsorption onto α-Al2O3 between 25 and 70 °C. *Applied Geochemistry*, **16** (7-8), 793-802.

Full Text: [A\App Geo16, 793.pdf](A/App%20Geo16,%20793.pdf)

Abstract: The adsorption of As(V) onto alpha-Al2O3 was investigated at 25, 50 and 70 °C using batch adsorption experiments. Results indicate that As is strongly adsorbed at low pH and gets progressively released to the fluid with increasing pH above 7. At any pH, increasing temperature favors aqueous species of As over surface species. Surface complexation constants were determined at the experimental temperatures by fitting the adsorption data. Adsorption reactions were then converted to semi-isocolumbic reactions, i.e, reactions with balanced like-charged aqueous species. Intrinsic adsorption constants of semi-isocolumbic reactions change linearly when plotted against inverse temperature, suggesting that the heat capacity of these reactions remains constant over the temperature range considered. This permitted thermodynamic parameters of intrinsic surface complexation constants to be determined. Changes in surface complexation constants result in a change in the surface speciation with increasing temperature. This change is similar to the one observed for aqueous species, i.e. increasing temperature favors less negatively charged species below a pH of 9 and more negatively charged species above a pH of 10. Comparison with the stability of As surface complexes with Fe suggests that surface complexes with Al are more stable. (C) 2001 Elsevier Science Ltd. All rights reserved.

Keywords: Temperature-Dependence, Elevated-Temperatures, Surface-Chemistry, Cadmium, Oxides, Transport, Arsenate, pH

? Simoneit, B.R.T. (2002), Biomass burning: A review of organic tracers for smoke from incomplete combustion. *Applied Geochemistry*, **17** (3), 129-162.

Full Text: [2002\App Geo17, 129.pdf](2002/App%20Geo17,%20129.pdf)

Abstract: Biomass combustion is an important primary source of particles with adsorbed biomarker compounds in the global atmosphere. The introduction of natural product organic compounds into smoke occurs primarily by direct volatilization/steam stripping and by thermal alteration based on combustion temperature. Although the molecular compositions of organic matter in smoke particles are highly variable, the molecular tracers are generally still source specific. Dehydroabietic acid is typically the major tracer for conifer smoke in the atmosphere. Degradation products from biopolymers (e.g. levoglucosan from cellulose, methoxyphenols from lignin) are also excellent tracers. Additional markers of thermally-altered and directly-emitted natural products in smoke have been defined which aids the assessment of the organic matter types and input from biomass combustion to aerosols. The precursor to product approach of compound characterization by organic geochemistry has also been applied successfully to provide source specific tracers for studying the chemistry and dispersion of ambient aerosols and the intermingling of natural with anthropogenic emissions and with smoke plumes. A brief review of the organic matter composition in aerosols derived from the major sources is also given, with emphasis on the detection of biomass burning components. These major sources are the natural background from biogenic detritus (e.g. plant wax, microbes, etc.) and anthropogenic particle emissions (e.g. oils, soot, synthetics, compounds, etc.). The emissions of organic constituents in coal smoke particulate matter are also reviewed and depend on combustion temperature, ventilation, burn time, and coal rank (geologic maturity). The components of peat and brown coal and to a lesser degree semi-bituminous coal consist mainly of hydrocarbons, biomarkers, and aromatic components, quite similar to burning of contemporary biomass. Dispersion from the source and long range transport of smoke particulate matter with the associated organic compounds is also discussed. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Polycyclic Aromatic-Hydrocarbons, Air-Pollution Sources, Transform Infrared-Spectroscopy, Molecular Marker Analysis, Chromatography-Mass-Spectrometry, Resolution Gas-Chromatography, Cretaceous Tertiary Boundary, Environmental Tobacco-Smoke, Residential Wood Combustion, Particle-Size Distributions

Notes: highly cited

? Smedley, P.L. and Kinniburgh, D.G. (2002), A review of the source, behaviour and distribution of arsenic in natural waters. *Applied Geochemistry*, **17** (5), 517-568.

Full Text: [2002\App Geo17, 517.pdf](2002/App%20Geo17,%20517.pdf)

Abstract: The range of As concentrations found in natural waters is large. ranging from less than 0.5 µg l-1 to more than 5000µg l-1. Typical concentrations in freshwater are less than 10µg l-1 and frequently less than lµg l-1. Rarely, much higher concentrations are found, particularly in groundwater. In such areas, more than 10% of wells may be ‘affected’ (defined as those exceeding 50µg l-1 and in the worst cases, this figure may exceed 90%. Well-known high-As groundwater areas have been found in Argentina, Chile, Mexico, China and Hungary, and more recently in West Bengal (India), Bangladesh and Vietnam, The scale of the problem in terms of population exposed to high As concentrations is greatest in the Bengal Basin with more than 40 million people drinking water containing ‘excessive’ As. These large-scale ‘natural’ As groundwater problem areas tend to be found in two types of environment: firstly. inland or closed basins in arid or semi-arid areas, and secondly, strongly reducing aquifers often derived from alluvium. Both environments tend to contain geologically young sediments and to be in flat, low-lying areas where groundwater flow is sluggish. Historically, these are poorly flushed aquifers and any As released from the sediments following burial has been able to accumulate in the groundwater. Arsenic-rich groundwaters are also found in geothermal areas and, on a more localised scale, in areas of mining activity and where oxidation of sulphide minerals has occurred. The As content of the aquifer materials in major problem aquifers does not appear to be exceptionally high, being normally in the range 1-20 mg kg-1. There appear to be two distinct ‘triggers’ that can lead to the release of As on a large scale. The first is the development of high pH (> 8.5) conditions in semi-arid or arid environments usually us a result of the combined effects of mineral weathering and high evaporation rates. This pH change leads either to the desorption of adsorbed As (especially As(V) species) and a range of other anion-forming elements (V, B F, Mo, Se and U) from mineral oxides, especially Fe oxides, or it prevents them from being adsorbed. The second trigger is the development of strongly reducing conditions at near-neutral pH values, leading to the desorption of As from mineral oxides and to the reductive dissolution of Fe and Mn oxides, also leading to As release. Iron(II) and As(III) are relatively abundant in these groundwaters and SO4 concentrations are small (typically 1 mg l-1 or less). Large concentrations of phosphate, bicarbonate, silicate and possibly organic matter can enhance the desorption of As because of competition for adsorption sites. A characteristic feature of high groundwater As areas is the large degree of spatial variability in As concentrations in the groundwaters. This means that it may be difficult, or impossible, to predict reliably the likely concentration of As in a particular well from the results of neighbouring wells and means that there is little alternative but to analyse each well. Arsenic-affected aquifers are restricted to certain environments and appear to be the exception rather than the rule. In most aquifers, the majority of wells are likely to be unaffected, even when, for example, they contain high concentrations of dissolved Fe. (C) 2002 Published by Elsevier Science Ltd, All rights reserved.

Keywords: Disseminated Gold Deposits, Hydrous Ferric-Oxide, Deep-Sea Sediments, In-Ground Water, Drinking-Water, Trace-Elements, United-States, Biogeochemical Processes, Dissimilatory Reduction, Blackfoot Disease

Woolard, C.D., Strong, J. and Erasmus, C.R. (2002), Evaluation of the use of modified coal ash as a potential sorbent for organic waste streams. *Applied Geochemistry*, **17** (8), 1159-1164.

Full Text: [A\App Geo16, 1159.pdf](A/App%20Geo16,%201159.pdf)

Abstract: Fly ash was modified by hydrothermal treatment with 7 M NaOH. The resultant product displayed an 8-fold increase in surface area. The primary crystalline component of the modified fly ash was identified by X-ray diffraction to be hydroxysodalite (Na6Al6Si6O24.8H2O). The cation exchange capacity of the modified ash was significantly increased over that of the raw fly ash (188 vs 2 meq g-1). Adsorption experiments showed that the modified fly ash adsorbed a cationic dye (Methylene blue) to a much greater extent than an anionic dye (alizarin sulfonate). Saturation adsorption revealed that the capacity of the ash for Methylene blue had increased 10-fold during modification when compared to the raw ash. Adsorption is thus ascribed to be a surface effect rather than involving incorporation into the channels of the hydroxysodalite structure.

Keywords: Fly-Ash, Zeolite

Romero, L., Alonso, H., Campano, P., Fanfani, L., Cidu, R., Dadea, C., Keegan, T., Thornton, I. and Farago, M. (2003), Arsenic enrichment in waters and sediments of the Rio Loa (Second Region, Chile). *Applied Geochemistry*, **18** (9), 1399-1416.

Full Text: [A\App Geo18, 1399.pdf](A/App%20Geo18,%201399.pdf)

Abstract: The Second Region of Chile (126, 500 km2) is extremely arid, with a dramatic scarcity of water. The only water resource for the population (about 420,000 habitants) and the mining industry (the most important economic activity in the region) is the 440 km long Rio Loa. Moreover, this is highly enriched in As. In order to assess As concentrations and sources, and to evaluate the impact of mining activity on the water quality in the Rio Loa basin, water and sediment samples were taken at strategic points along the river and its major tributaries. The water in the whole basin is quite saline (total dissolved solids up to 11 g/l) and heavily enriched in As (average: 1400 μg/l) and B (average: 21,000 μg/l). These values are up to 300 and 100 times higher than the respective guidelines suggested by the WHO for drinking water. The quality of water is extremely poor along the tributary Salado, mainly fed by the El Tatio geothermal waters that are very rich in As (up to 27,000 μg/l) and other components. Sediments from the Rio Loa and its tributaries have As contents in the range of 26-2000 mg/kg (mean value of 60 samples: 320 mg/kg), and reach 11,000 mg/kg at El Tatio. Sequential extraction analyses show the As to be mainly associated with Fe-Mn oxy-hydroxides and residual phases, but part of the As (about 20%) is readily available being extracted from the exchangeable and carbonate phases. This result is in agreement with the correlation observed between As content in sediments and As concentration in waters in the area. The extreme arid conditions, high evaporation, and the lack of low-As tributaries contribute to maintain high concentrations of As and other components in the Rio Loa water to the mouth. Due to the oxidising conditions, neutral to alkaline pH, high salinity and high As concentrations, adsorption of As-species is not favoured. The main As source in the Rio Loa basin is considered to be natural, i.e. linked to the lithologies in the area. Smelter emissions and mining wastes, as well as the As-rich effluents from the water treatment plants, possibly represent additional sources.

Tonkin, J.W., Balistrieri, L.S. and Murray, J.W. (2004), Modeling sorption of divalent metal cations on hydrous manganese oxide using the diffuse double layer model. *Applied Geochemistry*, **19** (1), 29-53.

Full Text: [A\App Geo19, 29.pdf](A/App%20Geo19,%2029.pdf)

Abstract: Manganese oxides are important scavengers of trace metals and other contaminants in the environment. The inclusion of Mn oxides in predictive models, however, has been difficult due to the lack of a comprehensive set of sorption reactions consistent with a given surface complexation model (SCM), and the discrepancies between published sorption data and predictions using the available models. The authors have compiled a set of surface complexation reactions for synthetic hydrous Mn oxide (HMO) using a two surface site model and the diffuse double layer SCM which complements databases developed for hydrous Fe(III) oxide, goethite and crystalline Al oxide. This compilation encompasses a range of data observed in the literature for the complex HMO surface and provides an error envelope for predictions not well defined by fitting parameters for single or limited data sets. Data describing surface characteristics and cation sorption were compiled from the literature for the synthetic HMO phases birnessite, vernadite and delta-MnO2. A specific surface area of 746 m2 g-1 and a surface site density of 2.1 mmol g-1 were determined from crystallographic data and considered fixed parameters in the model. Potentiometric titration data sets were adjusted to a pH(IEP) value of 2.2. Two site types (equivalent toXOH and equivalent toYOH) were used. The fraction of total sites attributed to equivalent toXOH (alpha) and pK(a2) were optimized for each of 7 published potentiometric titration data sets using the computer program FITEQL3.2. pK(a2) values of 2.35±0.077 (equivalent toXOH) and 6.06±0.040 (equivalent toYOH) were determined at the 95% confidence level. The calculated average a value was 0.64, with high and low values ranging from 1.0 to 0.24, respectively. pK(a2) and alpha values and published cation sorption data were used subsequently to determine equilibrium surface complexation constants for Ba2+, Ca2+, Cd2+, Co2+, Cu2+, Mg2+, Mn2+, Ni2+, Pb2+, Sr2+ and Zn2+. In addition, average model parameters were used to predict additional sorption data for which complementary titration data were not available. The two-site model accounts for variability in the titration data and most metal sorption data are fit well using the pK(a2) and alpha values reported above. A linear free energy relationship (LFER) appears to exist for some of the metals; however, redox and cation exchange reactions may limit the prediction of surface complexation constants for additional metals using the LFER. (C) 2003 Elsevier Ltd. All rights reserved.

Keywords: Surface Complexation Model, Na-Rich Birnessite, X-Ray-Diffraction, Hexagonal Birnessite, Solution Interface, Aqueous-Solution, Adsorption Characteristics, Exafs Spectroscopy, Dioxide, Iron

? Nickson, R.T., McArthur, J.M., Shrestha, B., Kyaw-Myint, T.O. and Lowry, D. (2005), Arsenic and other drinking water quality issues, Muzaffargarh District, Pakistan. *Applied Geochemistry*, **20** (1), 55-68.

Full Text: [2005\App Geo20, 55.pdf](2005/App%20Geo20,%2055.pdf)

Abstract: In 49 samples of groundwater, sampled in Muzaffargarh District of south-western Punjab, central Pakistan. concentrations of As exceeded the World Health Organisation provisional guideline value. and United States, Environmental Protection Agency (USEPA) Maximum Contaminant Level (MCL), of 10 μg L-1 in 58% of samples and reached up to 906 μg L-1. In this semi-arid region canal irrigation has lead to widespread water-logging. and evaporative concentration of salts has the potential to raise As concentrations in shallow groundwater well above 10 μg L-1. In fact, in rural areas, concentrations stay below 25 μg L-1 because As in the oxic shallow groundwater. and in recharging water. is sorbed to aquifer sediments. In some urban areas, however, shallow groundwater is found to contain elevated levels of As. The spatial distribution of As-rich shallow groundwater indicates either direct contamination with industrial or agricultural chemicals, or some other anthropogenic influence. Geochemical evidence suggests that pollutant organics from unconfined sewage and other sources drives reduction of hydrous ferric oxide (HFO) releasing sorbed As to shallow groundwater. The situation is slightly less clear for seven wells sampled which tap deeper groundwater. all of which were found with >50 pg L-1 As. Here As concentrations seem to increase with depth and differing geochemical signatures are seen, suggesting that As concentrations in older groundwater may be governed by different processes. Other data on parameters of potential concern in drinking water are discussed briefly at the end of the paper. (C) 2004 Elsevier Ltd. All rights reserved.

Keywords: Dissimilatory Reduction, United-States, Ground-Water, West-Bengal, Sediments, Geochemistry, Mobilization, Subsurface, Soils, USA

? Jacks, G., Bhattacharya, P., Chaudhary, V. and Singh, K.P. (2005), Controls on the genesis of some high-fluoride groundwaters in India. *Applied Geochemistry*, **20**, 221-228.

Full Text: [2005\App Geo20, 221.pdf](2005/App%20Geo20,%20221.pdf)

Abstract: India has an increasing incidence of fluorosis, dental and skeletal, with some 62 million people at risk. High fluoride groundwaters are present especially in the hard rock areas south of the Ganges valley and in the arid north-western part of the country. The phenomenon is related to groundwater with residual alkalinity (Ca2+ < HCO3-). Fluoride concentrations are governed by adsorption equilibria and by fluorite solubility. Evapotranspiration leads to a precipitation of calcite, a lowering of Ca activity and increase in Na/Ca ratios, and this allows an increase in F- levels. In southern India, Mg seems to be controlled by dolomite, while sepiolite and palygorskite are Mg sinks in Rajasthan but may then release F- under alkaline conditions. The latter two minerals are probably also important sources and sinks for F- in the hydroxy-positions. The increase in the extent of sodic soils as a result of irrigation is a contributing factor to the increasing incidence of fluorosis. Remedial measures including addition of gypsum and rainwater harvesting are needed even in areas where the sodicity does not cause structural problems in the soil.

? Guo, H.M., Stuben, D. and Berner, Z. (2007), Removal of arsenic from aqueous solution by natural siderite and hematite. *Applied Geochemistry*, **22** (5), 1039-1051.

Full Text: [2007\App Geo22, 1039.pdf](2007/App%20Geo22,%201039.pdf)

Abstract: Batch and column experiments were conducted to examine the capability of naturally formed hematite and siderite to remove As from drinking water. Results show that both minerals were able to remove As from aqueous solutions, but with different efficiencies. In general, each material removed arsenate much more efficiently than As-DMA (dimethylarsinic acid), with the lowest adsorption efficiency for arsenite. The best removal efficiency for As species was obtained using a hematite, with a grain size range between 0.25 and 0.50 mm. The adsorption capacity for inorganic As(V) reached 202 mu g/g. The pH generally had a great impact on the arsenate removal by the Fe minerals studied, while arsenite removal was slightly dependent on the initial pH of between 3 and 10. The presence of phosphate always had a negative effect on arsenate adsorption, due to competitive adsorption between them. A column packed with hematite in the upper half and siderite in the lower half with a grain size range of 0.25-0.5 mm proved to be an efficient reactive filter for the removal of all As species, causing a decrease in As concentration from 500 mu g/L (including 200 mu g/L As(V) as arsenate, 200 mu g/L As(III) as arsenite and 100 mu g/L As(V) as DMA) to less than 10 mu g/L after 1055 pore volumes of water were filtered at a flow rate of 0.51 mL/min. After 2340 pore volumes passed through the column filter, the total inorganic As in the effluent was less than 5 mu g/L. The total As load in the column filter was estimated to be 0.164 mg/g. Results of mu-synchrotron X-ray fluorescence analysis (mu-XRFA) suggest that coatings of fresh Fe(III) oxides, formed on the surface of the siderite grains after two weeks of operation, greatly increased the adsorption capacity of the filling material towards As. (c) 2007 Elsevier Ltd. All rights reserved.

Keywords: 6 Districts, Adsorption, Adsorption Capacity, Affected People, Competitive Adsorption, Drinking-Water, Ground-Water, Human Hepatocytes, Hydrous Ferric-Oxide, Monomethylarsonous Acid MMA(III), Pore, Removal, Surface Complexation Model, Water, West-Bengal

? Tan, X.L., Chen, C.L., Yu, S.M. and Wang, X.K. (2008), Sorption of Ni2+ on Na-rectorite studied by batch and spectroscopy methods. *Applied Geochemistry*, **23** (9) 2767-2777.

Full Text: [2008\App Geo23, 2767.pdf](2008/App%20Geo23,%202767.pdf)

Abstract: Sorption of Ni2+ on Na-rectorite as a function of contact time, temperature, pH and fulvic acid (FA)/humic acid (HA) was studied under ambient conditions. A pseudo-second-order rate equation was used to simulate the kinetic sorption. The removal of Ni2+ increased with increasing pH. The presence of FA/HA enhanced the sorption of Ni2+ at low pH values, whereas no drastic effect of FA/HA on Ni2+ uptake to rectorite was found at high pH values. The diffuse layer model (DLM) fitted the experimental data of Ni2+ sorption in the absence and presence of FA/HA very well with the aid of FlTEQL 3.2. The Langmuir, Freundlich and Dubinin-Radushkevich (D-R) models were used to simulate the sorption isotherms of Ni2+ at different temperatures. The thermodynamic data (AW, ASO, AGO) were calculated from the temperature dependent sorption isotherms and the results suggested that the sorption process of Ni2+ on rectorite was spontaneous and endothermic. The sorption and species of Ni2+ on rectorite in the presence and absence of FA/HA was also investigated and characterized by XPS. The spectroscopic analysis indicated no drastic structural changes of Na-rectorite and the sorption of Ni2+ mainly occurred on the surface and at the edge position of Na-rectorite. (c) 2008 Elsevier Ltd. All rights reserved.

Keywords: Ionic-Strength, Humic-Acid, Adsorption Characteristics, Aqueous-Solutions, Chelating Resin, Foreign Ions, Fulvic-Acid, Montmorillonite, Temperature, XPS

? Guo, H.M., Stuben, D., Berner, Z. and Yu, Q.C. (2009), Characteristics of arsenic adsorption from aqueous solution: Effect of arsenic species and natural adsorbents. *Applied Geochemistry*, **24** (4), 657-663.

Full Text: [2009\App Geo24, 657.pdf](2009/App%20Geo24,%20657.pdf)

Abstract: Batch and column experiments were conducted on As adsorption from aqueous solution by natural solids to test the feasibility of these materials to act as adsorbents for As removal from groundwater and drinking water. The solids considered are natural hematite and natural siderite. The As species studied are As(V), As(III) and dimethylarsinic acid (DMA). Arsenic(III), As(V) and DMA were removed to different extents by the solids studied from water solutions containing these three As species, with the highest efficiency for As(V). In aqueous solutions with a mixture of As species, adsorption kinetics depend on the species. On both materials, As(V) was preferentially adsorbed in the batches and first reached equilibrium, followed by DMA and As(M). The As adsorption took place more slowly on natural hematite and natural siderite compared with ferrihydrite. The results demonstrate that the amount of As removed from As(III) batches was greater than that from As(V) batches due to a surface alteration of the solids caused by As(III) oxidation. Although the highest efficiency for As retention was observed on hematite HIO1 in the batch experiments, siderite used as column filling was more efficient in removing As from water containing the As species studied in comparison with hematite. The coating of fresh Fe(III)-oxides was much more intensive in the siderite-packed column than in the hematite-packed column. The combination of siderite and hematite would promote the column filling performance in removing As from aqueous solution. (C) 2008 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Adsorption Kinetics, Batch, Birnessite, Drinking-Water, Equilibrium, Ferrihydrite, Groundwater, Kinetics, Oxidation, Removal, Siderite, Toxicity, Water

? Alemayehu, E. and Lennartz, B. (2010), Adsorptive removal of nickel from water using volcanic rocks. *Applied Geochemistry*, **25** (10), 1596-1602.

Full Text: [2010\App Geo25, 1596.pdf](2010/App%20Geo25,%201596.pdf)

Abstract: This paper presents the results of a study on Ni(II) removal from water by adsorption using abundant and low-cost volcanic rock grains: Scoria (VSco) and Pumice (VPum), which could be used as an alternative approach to remove potentially harmful metals from contaminated water. Basic process characteristics were determined under batch conditions. The maximum adsorption capacities for Ni(II) on VSco and VPum were found to be 980 and 1187 mg kg-1, respectively. These results were obtained at the optimized conditions of pH (5.0), temperature (24.9ºC), contact time (24 h), adsorbent/solution ratio (1:20), particle size (fine) and with the variation of initial concentrations between 0.5 and 50 mg L-1. Competitive adsorption of Ni(II), Cd(II) and Cu(II) on the adsorbents present in binary as well as ternary mixtures were also compared with the single metal solution. Thus, given that enough volcanic rock grains are provided, Ni(II) ions could be removed even from a metal ion bearing matrix. A number of available models like Lagergren pseudo-first order kinetics, second-order kinetics, intra-particle diffusion and liquid film diffusion were utilized to evaluate the kinetics and the mechanism of the sorption interactions. The results revealed that the pseudo-second order equation best described the kinetics mechanisms of Ni(II) adsorption although the removal process was found to be complex. Moreover, three adsorption models have been evaluated in order to attempt to fit the experimental data, namely the Langmuir, the Freundlich and the Redlich-Peterson isotherm models. It was found that the first two isotherms most closely described the adsorption parameters. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Adsorbents, Adsorption, Adsorption Capacities, Adsorptive Removal, Alternative, Approach, Aqueous-Solution, Batch, Cadmium, Cd(II), Characteristics, Competitive Adsorption, Copper(II), Cu(II), Data, Diffusion, Equilibrium, Experimental, Film Diffusion, First, Freundlich, Heavy-Metals, Intra-Particle Diffusion, Intraparticle Diffusion, Ions, Isotherm, Isotherm Models, Isotherms, Kinetics, L1, Lagergren, Langmuir, Liquid, Low Cost, Low-Cost Adsorbents, Matrix, Mechanism, Mechanisms, Metal, Metals, Models, Montmorillonite, Ni(II), Ni(II) Ions, Ni(II) Removal, Nickel, Particle Size, pH, Pseudo First Order, Pseudo Second Order, Pseudo-First Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second-Order, Redlich-Peterson, Removal, Rights, Second Order, Second Order Kinetics, Second-Order, Second-Order Kinetics, Size, Soils, Solution, Sorption, Temperature, Water

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Full Text: [2010\App Geo25, 1830.pdf](2010/App%20Geo25,%201830.pdf)

Abstract: Sorption phenomena are known to play significant roles in metal mobility in mine drainage waters. The present study focuses on sorption phenomena controlling Ni concentrations in contaminated neutral drainage issued from the waste rock piles of the Tio mine, a hematite-ilmenite deposit near Havre-Saint-Pierre, Quebec, Canada exploited by Rio Tinto Iron and Titanium. Batch sorption tests were conducted on waste rock samples of different composition and degree of alteration, as well as on the main mineral phases purified from the waste rocks. Sorbed phases were submitted to sequential extractions, XPS and DRIFT studies for further interpretation of sorption phenomena. The results from the present study confirm that sorption phenomena play a significant role in the Tio mine waste rocks, and that the main sorbent phases are the residual ilmenite ore in waste rocks, as well as plagioclase, the main gangue mineral. Sequential extractions suggest that most sorption sites are associated with reducible fractions, and XPS results indicate that Ni is sorbed as the hydroxide Ni(OH)(2). The results from the present study provide useful information on sorption phenomena involved in the Tio mine waste rocks and enable further interpretation of Ni geochemistry in contaminated neutral drainage. (C). 2010 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Aqueous-Solutions, Canada, Composition, Dissolution Kinetics, Drainage, Drift, Geochemistry, Heavy-Metals, Information, Iron, Kaolinite, Metal, Metal Mobility, Mine Drainage, Mine Waste, Mobility, Ni(II), Nickel Metal, Rights, Role, Sorbent, Sorption, Surfaces, Tailings Impoundment, Thin-Films, Waste, Waste Rocks, Waters, XPS, XPS Spectra

? Rajapaksha, A.U., Vithanage, M., Jayarathna, L. and Kumara, C.K. (2011), Natural Red Earth as a low cost material for arsenic removal: Kinetics and the effect of competing ions. *Applied Geochemistry*, **26** (4), 648-654.

Full Text: [2011\App Geo26, 648.pdf](2011/App%20Geo26,%20648.pdf)

Abstract: This study investigates the effect of reaction time and competing ions on As retention on Natural Red Earth (NRE). The initial As [As(III) or As(V)1 concentrations were varied between similar to 10-5 and similar to 10-4 M for competitive adsorption studies while samples were spiked with similar to 2.67 mu M As for kinetic studies. Batch experiments were performed for solutions with different concentrations of PO43-, NO3- and SO42- (5.26×10-5, 8.06×10-4, and 2.60×10-3 M, respectively) as competing ions for the two systems. One system had controlled conditions (pH 5.5, 0.01 M NaNO3) while the second is uncontrolled (no pH control and no NaNO3). Kinetic data were best described by a pseudo-second order model demonstrating strong interaction between As species and >FeOH and AlOH sites on the NRE surface. The equilibrium solid phase concentrations for As(III) and As(V) were observed as similar to 20 and similar to 12.5 mu g/g, respectively. The time taken to equilibrium was the same (90 min) for both As species. Competitive adsorption isotherm experiments showed a greater effect of PO43- on the reduction of adsorption of both As species than with SO42- and NO3-. Arsenic(III) agreed with the Langmuir equation signifying monolayer formation while As(V) adsorption was in accord with a Fruendlich isotherm indicating multilayer adsorption. FTIR spectra indicated an inner sphere bonding of arsenate and Fe-O sites with PO43- while an outer-sphere weak complexation was observed with NO3-. The substrate appears to show a potential for a similar rate of adsorption under both controlled and uncontrolled conditions indicating its possible use in domestic water filters to remove As from water. (C) 2011 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Adsorption Isotherm, Anions, Arsenic, Arsenic(III), As(III), Batch, Competitive Adsorption, Equilibrium, Ferrihydrite, FTIR, Goethite, Iron, Isotherm, Kinetic, Kinetics, Langmuir, Oxide Minerals, pH, Phosphate, Sorption, Water

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? White, H.D. (2004), Citation analysis and discourse analysis revisited. *Applied Linguistics*, **25** (1), 89-116.

Full Text: [2004\App Lin25, 89.pdf](2004/App%20Lin25,%2089.pdf)

Abstract: John Swales’s 1986 article ‘Citation analysis and discourse analysis’ was written by a discourse analyst to introduce citation research from other fields, mainly sociology of science, to his own discipline. Here, I introduce applied linguists and discourse analysts to citation studies from information science, a complementary tradition not emphasized by Swales. Using replicable bibliometric techniques, I show that interdisciplinary ties have grown among citation researchers from discourse analysis, sociology of science, and information science in the years since Swales wrote. Key authors, journals, articles, and books are presented in tables based on cocitation data from the Institute for Scientific Information. While theoretical integration of the different strands of research is far from complete, this article carries the effort forward by reviewing contributions from the 1970s to the present in three major lines of research: citation classification, content analysis of citation contexts, and studies of citer motivations. I pay particular attention to ideas that bear on teaching the art of citing-for example, in courses in English for research purposes-and to controversies in citation research of interest to discourse analysts.

Keywords: Authors, Behavior, Bibliometric, Citation, Citation Analysis, Citer Motivations, Classification, Content Analysis, Documents, Information Science, Information-Science, Journals, Knowledge, Model, Research, Science, Scientific Articles, Self-Citations, Sociology of Science

? Shi, L. (2010), Textual appropriation and citing behaviors of university undergraduates. *Applied Linguistics*, **31** (1), 1-24.

Full Text: [2010\App Lin31, 1.pdf](2010/App%20Lin31,%201.pdf)

Abstract: This article explores the citing behaviors of 16 undergraduates in a North American university. After completing a research paper for their disciplinary courses, each participating student was interviewed to identify in his/her writing words and ideas borrowed from source texts and to explain why and how the relevant texts were appropriated with or without citations. Analysis of students writing and comments illustrates how they relied on source texts for various aspects of their essays, some of which they believed required citations while some of which did not. Results showed that they tried to strike a balance between the need to cite published authors to gain credit for the scholarly quality of their writing and the desire to establish their own voice by limiting the extent to which they cited other texts. Some students also reported how they chose between quoting and paraphrasing (though the latter sometimes contained direct copying) on the basis of their ability to rephrase others words and their understanding of the different roles played by the two. The study indicates the degree to which citational acts are discursive markings of learning and knowledge construction.

Keywords: Authors, Citations, Essays, Learning, Plagiarism, Research, University

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? Zhou, L., Gao, C. and Xu, W.J. (2010), Magnetic dendritic materials for highly efficient adsorption of dyes and drugs. *ACS Applied Materials & Interfaces*, **2** (5), 1483-1491.

Full Text: [2010\Acs App Mat Int2, 1483.pdf](2010/Acs%20App%20Mat%20Int2,%201483.pdf)

Abstract: A versatile and robust adsorbent with both magnetic property and very high adsorption capacity is presented on the basis of functionalization of iron oxide-silica magnetic particles with carboxylic hyperbranched polyglycerol (Fe3O4/SiO2/HPG-COOH). The structure of the resulting product was confirmed by Fourier transform infrared (FTIR) spectra, thermo gravimetric analysis (TGA), zeta-potential, and transmission electron microscopy (TEM). According to the TGA results, the density of the carboxylic groups on the surface of Fe3O4/SiO2/HPG-COOH is calculated to be as high as 3.0 mmol/g. posing a powerful base For adsorbing dyes and drugs. Five kinds of dyes and one representative anticancer drug were chosen to investigate the adsorption capacity of the as-prepared magnetic adsorbent. The adsorbent shows highly efficient adsorption performance for all of the adsorbates especially for the cationic dyes and drug. For example, the saturated adsorption capacity of the Fe3O4/SiO2/HPG-COOH for methyl violet (MV) can reach 0.60 mmol/g, which is much higher than the previous magnetic adsorbents (usually lower than 0.30 mmol/g). 95% of MV and 90% of R6G could be adsorbed within 5 min, and both of the adsorptions reached equilibrium in about 15 min. The adsorption kinetics and isotherm of the adsorbents were investigated in detail and found that the kinetic and equilibrium adsorptions are well-modeled using pseudo-second-order kinetics and Langmuir isotherm model, respectively. In addition, the influences of pH and ionic strength on the adsorption capacity were also examined and found that pH has much greater effect on the adsorption capacity compared with the ionic strength. Regeneration experiments showed that the Fe3O4/SiO2/HPG-COOH can be well-regenerated in ethanol and partially regenerated in 1 M HCI aqueous solution. After regeneration, the magnetic adsorbents can still show high adsorption capacity even for 10 cycles of desorption-adsorption. No obvious decreases of magnetic intensity and. aggregation of adsorbents can be observed even after 10 cycles of adsorption-desorption.

Keywords: Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Kinetics, Adsorption Kinetics And Isotherm, Adsorption Performance, Adsorption-Desorption, Aggregation, Analysis, Aqueous Solution, Aqueous-Solution, Capacity, Carbon Nanotubes, Carboxylic, Cationic Dyes, CDTE Quantum Dots, Drug, Drugs, Dye, Dyes, Electron Microscopy, Equilibrium, Ethanol, Experiments, FTIR, HCI, Hyperbranched Polyglycerols, Hyperbranched Polymer, Ionic Strength, Iron, Iron Oxide, Isotherm, Isotherm Model, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Magnetic, Magnetic Adsorbent, Magnetic Particles, Methyl Violet, Methylene-Blue, Model, Nano-Adsorbent, Organic-Dyes, Particles, Performance, pH, Property, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Reactive Dyes, Regeneration, Solution, Strength, Structure, Surface, TEM, TGA, Transmission, Zeta Potential

? Yu, X.Y., Luo, T., Zhang, Y.X., Jia, Y., Zhu, B.J., Fu, X.C., Liu, J.H. and Huang, X.J. (2011), Adsorption of lead(II) on O2-plasma-oxidized multiwalled carbon nanotubes: Thermodynamics, kinetics, and desorption. *ACS Applied Materials & Interfaces*, **3** (7), 2585-2593.

Full Text: [2011\ACS App Mat Int3, 2585.pdf](2011/ACS%20App%20Mat%20Int3,%202585.pdf)

Abstract: O2-plasma-oxidized multiwalled carbon nanotubes (po-MVVCNTs) have been used as an adsorbent for adsorption of lead(II) in water. Scanning electron microscopy, transmission electron microscopy, X-ray diffraction, and Raman spectroscopy measurements show that the bulk properties of MINCNTs were not changed after O2-plasma oxidation. The adsorption capacity of MWCNTs for lead(II) was greatly enhanced after plasma oxidation mainly because of the introduction of oxygen-containing functional groups onto the surface of MWCNTs. The removal of lead(II) by po-MWCNTs occurs rather quickly, and the adsorption kinetics can be well described by the pseudo-second-order model. The adsorption isotherm of lead(II) onto MWCNTs fits the Langmuir isotherm model. The adsorption of lead(II) onto MIATCNTs is strongly dependent upon the pH values. X-ray photoelectron spectroscopy analysis shows that the adsorption mechanism is mainly due to the chemical interaction between lead(II) and the surface functional groups of po-MWCNTs. The thermodynamic parameters (ΔHº, ΔSº, and ΔGº) calculated from the adsorption isotherms suggest that the adsorption of lead(II) onto MWCNTs is endothermic and spontaneous. The regeneration performance shows that lead(II) can be easily regenerated from po-MVVCNTs by altering the pH values of the solution.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Isotherm, Adsorption Isotherms, Adsorption Kinetics, Aqueous-Solution, Carbon, Desorption, Dielectric Barrier Discharge, Electron Microscopy, Isotherm, Isotherms, Kinetics, Langmuir, Langmuir Isotherm, Lead(II), Mechanism, Multiwalled Carbon Nanotubes, O2 Plasma, O2 Plasma, Pb(II), pH, Plasma Treatment, Raman, Raman-Spectroscopy, Removal, Sorption, Surface Modification, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Water, X-Ray Diffraction

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? Seidler, R.J., Knittel, M.D. and Brown, C. (1975), Potential pathogens in the environment: Cultural reactions and nucleic acid studies on Klebsiella pneumoniae from clinical and environmental sources. *Applied Microbiology*, **29** (6), 819-825.

Abstract: The phenotypic and nucleic acid properties of Klebsiella pneumoniae have been studied on cultures obtained from six different habitats (humans, vegetables, seeds, trees, rivers, and pulp mills). The 19 cultural reactions of 107 isolates varied significantly only in tryptophanase activity and dulcitol fermentation. The percentage of guanine plus cytosine base composition of 41 isolates varied from 53.9 to 59.2%. The range of percentage of guanine plus cytosine base composition for environmental klebsiellas was broader than that for the cultures of human origin. The range of deoxyribonucleic acid relative reassociation (homology) to the human K. pneumoniae reference strain extended from 5% to 100% and the chromosome molecular weights ranged from 2,200×106 to 3,000×106. The species of K. pneumoniae is thus molecularly more heterogeneous than previously thought and most isolates of human, pulp mill, and river origin are genetically indistinguishable. The presence of K. pneumoniae therefore represents a deterioration of the microbiological quality of the environment and should be considered of public health significance. At the present time the health significance of the molecularly more divergent strains, primarily of vegetable and seed origin, their relationship to klebsiellas of human origin, or to other genera of the Enterobacteriaceae is unclear.

? Atlas, R.M. (1975), Effects of temperature and crude-oil composition on petroleum biodegradation. *Applied Microbiology*, **30** (3), 396-403.

# Title: Applied Microbiology and Biotechnology

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Biotechnology & Applied Microbiology: Impact Factor 1.505, 46/134 (2000); Impact Factor 2.586, 39/139 (2005)

de Rome, L. and Gadd, G.M. (1987), Copper adsorption by *Rhizopus Arrhizus*, *Cladosporium resinae* and *Penicillium italicum*. *Applied Microbiology and Biotechnology*, **26** (1), 84-90.

Full Text: [1987\App Mic Bio26, 84.pdf](1987/App%20Mic%20Bio26,%2084.pdf)

Abstrct: Copper adsorption by *Rhizopus* arrhizus, Cladosporium resinae and *Penicillium* italicum was studied using a copper-selective electrode. Copper adsorption by C. resinae and P. italicum obeyed the Freundlich and Langmuir isotherms for single-layer adsorption whereas R. arrhizus followed the BET isotherm for multi-layer adsorption. Temperature had little effect on adsorption over the range 4–25°C. Mineral acids were effective for desorption of copper from preloaded biomass, the efficiency of desorption increasing with decreasing pH. Other cations were also capable of copper desorption with zinc showing the greatest efficiency and sodium the lowest.

Gadd, G.M. and Derome, L. (1988), Biosorption of copper by fungal melanin. *Applied Microbiology and Biotechnology*, **29** (6), 610-617.

Full Text: [1988\App Mic Bio29, 610.pdf](1988/App%20Mic%20Bio29,%20610.pdf)

Abstrct: Melanin obtained from Aureobasidium pullulans and Cladosporium resinae was an efficient biosorbent for copper. Copper uptake could be expressed using various adsorption isotherms; melanin from A. pullulans obeyed Freundlich and Langmuir isotherms whereas C. resinae melanin followed the BET isotherm indicating a more complex type of adsorption than in A. pullulans. In general, uptake capacities of melanin were greater than for intact biomass and the higher uptake by pigmented rather than albino biomass could be correlated with the presence of melanin. Cu2+ was less readily desorbed from melanin by dilute mineral acids than from intact biomass and again, the relative ease of Cu2+ desorption from pre-loaded pigmented or albino biomass was correlated with the presence or absence of melanin. Mg2+ and Zn2+ appeared to be the most effective cations for desorption with Na+ and K+ the least effective. The addition of melanin to a coppercontaining culture of the albino strain of A. pullulans resulted in some reduction of toxicity.

? Keweloh, H., Heipieper, H.J. and Rehm, H.J. (1989), Protection of bacteria against toxicity of phenol by immobilization in calcium alginate. *Applied Microbiology and Biotechnology*, **31** (4), 383-389.

Full Text: [1989\App Mic Bio31, 383.pdf](1989/App%20Mic%20Bio31,%20383.pdf)

Abstract: The antibacterial activity of phenol was determined by measuring inhibition of exponentially growing free and immobilized cells of *Escherichia coli, Pseudomonas putida* and *Staphylococcus aureus*. Immobilization of microorganisms in calcium alginate beads reduced the growth inhibition caused by bacteriostatic concentrations of phenol. The increase in phenol tolerance occurred at different culture conditions and growth rates of the cells. The strength of the effect, however, was found to correlate with the formation of colonies in the gel matrix. Dissolution of gel beads led to a substantial loss of the protection against phenol of immobilized-grown cells.

? Luef, E., Prey, T. and Kubicek, C.P. (1991), Biosorption of zinc by fungal mycelial wastes. *Applied Microbiology and Biotechnology*, **34** (5), 688-692.

Full Text: [1991\App Mic Bio34, 688.pdf](1991/App%20Mic%20Bio34,%20688.pdf)

Abstract: Waste mycelia from several industrial fermentation plants (*Aspergillus Niger*, *Penicillium* chrysogenum, Claviceps paspali) were used as a biosorbent for zinc ions from aqueous environments, both batchwise as well as in a column mode. With all mycelia tested, biosorption per biomass dry weight was a function of pH (increasing with increasing pH between 1.0 and 9.0), biomass concentration (decreasing at high biomass concentrations) and the zinc concentration. Under optimized conditions, *A. Niger* and C. paspali were superior to P. chrysogenum. Treatment of *A. Niger* biomass with NaOH further increased its biosorbent capacity. Desorption of biosorbed zinc was achieved by elution with 0.1 M HCl, best results being obtained with NaOH-treated *A. Niger*. Such treatment did not affect the capacity for biosorption in repeated experiments. NaOH-treated *A. Niger* mycelia were also successfully used in removal of zinc from polluted waters in Austria, thereby showing that the simultaneous presence of other naturally occurring ions does not affect biosorption.

Keywords: *Rhizopus*-Arrhizus, Uranium, Copper, Thorium, Biomass, Metals

? Sumino, T., Nakamura, H., Mori, N., Kawaguchi, Y. and Tada, M. (1992), Immobilization of nitrifying bacteria in porous pellets of urethane gel for removal of ammonium nitrogen from waste-water. *Applied Microbiology and Biotechnology*, **36** (4), 556-560.

Full Text: [1992\App Mic Bio36, 556.pdf](1992/App%20Mic%20Bio36,%20556.pdf)

Abstract: The effects of immobilizing materials on the activity of nitrifying bacteria and removal of ammonium nitrogen (NH4-N) from waste-water by immobilized nitrifying bacteria were investigated using six urethane prepolymers. With a urethane prepolymer containing 2.27% free isocyanate, a high activity yield of nitrifying bacteria was obtained. There was a drastic improvement over the conventional method of immobilization by acrylamide in the activity yield. Inorganic synthetic waste-water was treated at a high loading rate of 0.24 kg N . m-3 . day-1. The NH4-N concentration of the effluent could be reduced to 2 mg . l-1 or less and the removal was 90%. The life of the pellets in terms of activity was at least 120 days.

Keywords: Paracoccus-Denitrificans Cells, Poly-Electrolyte Complex, Prepolymers

? Fourest, E. and Roux, J.C. (1992), Heavy metal biosorption by fungal mycelial by-products: Mechanisms and influence of pH. *Applied Microbiology and Biotechnology*, **37** (3), 399-403.

Full Text: [1992\App Mic Bio37, 399.pdf](1992/App%20Mic%20Bio37,%20399.pdf)

Abstract: Mycelial wastes of *Rhizopus Arrhizus*, used in fermentation industries to produce lipases, were studied for their ability to adsorb various heavy metal ions (Ni, Zn, Cd and Pb). Chelation of all these ions occurs by a chemical, equilibrated and saturatable mechanism, following the Langmuir adsorption model. Data transformation allowed us to calculate maximum uptake and dissociation constants of the sorption reaction. We also investigated the influence of pH on metal accumulation. Sorption capacity variations between different biosorbent types (*Rhizopus*, Mucor, *Penicillium*, and *Aspergillus*), could be related to their acidity. pH neutralisation during the sorption reaction considerably enhanced zinc chelation (up to 56 mg/g). Previous NaOH treatment of mycelial wastes also increased their capacity for metal sorption. We report *R. Arrhizus* metal uptake curves versus pH, using a pH-stat system. Optimal adsorption was achieved at neutral pH for nickel and zinc, pH 5.0 for lead, and inhibition of chelation was observed when the pH decreased. These results illustrate the importance of pH during the adsorption process, indicating a competitive mechanism for chelation between heavy metal ions and protons at cell wall adsorption sites.

Keywords: *Rhizopus-Arrhizus*, Biomass, Ions

? Spiller, H., Stallings, W., Woods, T. and Gunasekaran, M. (1993), Requirement for Direct Association of Ammonia-Excreting Anabaena-Variabilis Mutant (Sa-1) with Roots for Maximal Growth and Yield of Wheat. *Applied Microbiology and Biotechnology*, **40** (4), 557-566.

Full Text: App Mic Bio40, 557.pdf

Abstract: Direct association between wheat roots and an ammonia-excreting mutant of the cyanobacterium Anabaena variabilis, strain SA-1, was required for maximal enhancement of growth of wheat plants in nitrogen (N)-free, hydroponic medium. Over 85% of the cyanobacterial mutant SA-1 inoculated to the roots were adsorbed under non-saturating conditions. The adsorption process of SA-1 to wheat roots was biphasic: an initial rapid adsorption was followed by a slow phase with about 10% of the initial adsorption rate. The maximal adsorption rate of filaments observed was 1.6 mg dry wt. SA-1 adsorbed.plant-1 h-1. Bypassing CO2 fixation and sugar formation, the C-14 label from [C-14]sucrose was directly applied to leaf blades to study sugar translocation. The C-14 label from this treatment appeared in the wheat culture medium within an hour. Nitrate-grown plants excreted about 30% of the C-14 label into the medium, compared to only 10% excreted by wheat/Anabaena co-cultures. SA-1 assimilated 27% of all C-14 translocated from [U-C-14]sucrose applied to wheat leaves, and C-14 label from this treatment was recovered from strain SA-1 after 30 min. Roots and cyanobacteria accounted for 51% of all radioactive label recovered in the plants cocultured with SA-1 vs 20% for nitrate-grown plants. We studied the activity of beta-fructosidase (invertase) in wheat of variety Yecora rojo. Roots from nitrate-grown wheat plants produced high levels of invertase activity, which converted over 85% of 3 mM sucrose into glucose and fructose in 24 h. The rate of sucrose disappearance in the medium of co-cultures using A. variabilis SA-1, was 70% of that of nitrate-grown plants, but the levels of glucose and fructose in these cultures were always very low during sucrose conversion, suggesting hexose assimilation. To study the role of diffusible metabolites, a dialysis membrane was employed to separate the ammonia-excreting SA-1 from the wheat roots. Containing SA-1 in a dialysis bag away from direct root contact, severely limited leaf growth to less than one-third of the growth rate of nitrate control cultures. Ammonia produced by mutant SA-1 in dialysis bag cultures was excreted into the medium at 0.4 mM vs 1.2 mM in free-living cultures, but ammonia was not detectable in co-cultures with or without the dialysis bag containing the mutant. The nitrogenase activity derepressed in the mutant and responsible for ammonia excretion was always higher in the association co-cultures than in either free cells or in dialysis-bag cultures. The nitrogenase activity of strain SA-1 was highest (200 mu mol ethylene formed.mg-1 Chl.h-1) when the cyanobacterium was associated with the root tips. Dialysis membrane separation of plant and cyanobacterium severely inhibited growth of wheat during a complete growth cycle of 2 months. Total biomass and grain yield were very similar for control cultures without inorganic N or SA-1, and for diffusion cultures containing SA-1, kept in a dialysis bag around the roots. Total biomass of the association coculture attained 75% of the biomass of the nitrate-grown control. It is proposed that wheat roots supplied fructose derived from sucrose for growth and nitrogen fixation of SA-1 in the light, and that ammonia excreted by SA-1 was utilized by the wheat plant for its own growth.

Keywords: Adsorption, Adsorption Process, Adsorption Rate, Ammonia, Assimilation, Bacteria, Biological Nitrogen-Fixation, Biomass, CO2, Contact, Control, Culture, Cyanobacteria, Diffusion, Enhancement, Growth, Growth Rate, Membrane, Nitrate, Nitrogen, Process, Rice, Separation, Strain, Sucrose, Sugar, Surface, Treatment

? Lee, S.T., Rhee, S.K. and Lee, G.M. (1994), Biodegradation of pyridine by freely suspended and immobilized *Pimelobacter* sp. *Applied Microbiology and Biotechnology*, **41** (6), 652-657.

Full Text: [1994\App Mic Bio41, 652.pdf](1994/App%20Mic%20Bio41,%20652.pdf)

Abstract: Freely suspended and Ca-alginate-immobilized cells of Pimelobacter sp. were used for degradation of pyridine. When the pyridine concentration was up to 2 g l–1, freely suspended cells completely degraded pyridine regardless of the initial cell concentrations used. However, when the pyridine concentration increased to 4 g l–1, the initial cell concentration in freely suspended cell culture should be higher than 1.5 g dry cell weight l–1 for complete degradation of pyridine. In addition, a freely suspended cell culture with a high initial cell concentration resulted in a high volumetric pyridine-degradation rate, suggesting the potential use of immobilized cells for pyridine-degradation. When the immobilized cells were used for pyridine-degradation, neither specific pyridine-degradation rate nor tolerance against pyridine was improved. However, a high volumetric pyridine-degradation rate in the range 0.082–0.129 g l–1 hr–1 could be achieved by the immobilized cells because of the high cell concentration. Furthermore, when the immobilized cells were reused in degrading pyridine at a concentration of 2–4 g l–1 they did not lose their pyridine-degrading activity for 2 weeks. Taken together, the data obtained here showed the feasibility of using immobilized cells for pyridine-degradation.

Keywords: 4-Chlorophenol, Activity, Alcaligenes sp A-7-2, Calcium-Alginate, Cell Culture, Cells, Concentration, Concentrations, Continuous Degradation, Culture, Degradation, Derivatives, Immobilized, Immobilized Cells, Microorganisms, Phenol, Range, Soil, Tolerance, Waste-Water

? Liu, S.M., Jones, W.J. and Rogers, J.E. (1994), Influence of redox potential on the anaerobic biotransformation of nitrogen-heterocyclic compounds in anoxic fresh-water sediments. *Applied Microbiology and Biotechnology*, **41** (6), 717-724.

Full Text: [1994\App Mic Bio41, 717.pdf](1994/App%20Mic%20Bio41,%20717.pdf)

Abstract: The potential for degradation of four nitrogen-heterocyclic compounds was investigated in freshwater sediment slurries maintained under denitrifying, sulfate-reducing, and methanogenic conditions. Pyridine (10 mg/l) was rapidly transformed within 4 weeks under denitrifying conditions but persisted for up to 3 months under sulfate-reducing and methanogenic conditions. No intermediate biotransformation products of pyridine metabolism were detected under denitrifying conditions. Quinoline (10 mg/l) was completely transformed without a lag phase under methanogenic and sulfate-reducing conditions after incubation for 23 and 45 days, respectively. 2-Hydroxyquinoline was produced concomitantly with quinoline transformation under methanogenic and sulfate-reducing conditions. Under denitrifying conditions, less than 23% of the initial concentration of quinoline was transformed after anaerobic incubation for 83 days. Indole, however, was completely removed from sediment slurries under denitrifying, sulfate-reducing, and methanogenic conditions after anaerobic incubation for 18, 27, and 17 days, respectively. Only low amounts of oxindole (2-4 mg/l) accumulated during indole metabolism under methanogenic and denitrifying conditions, but under sulfate-reducing conditions, oxindole accumulation was stoichiometric with indole transformation. No evidence for biotransformation of carbazole was noted for all anaerobic conditions tested.

Keywords: Accumulation, Anaerobic, Bacterium, Biodegradation, Biotransformation, Concentration, Deep Subsurface Sediments, Degradation, Freshwater, Freshwater Sediment, Groundwater, Indole Metabolism, Low, Metabolism, Methane, Methanogenic, Microbial Transformation, Products, Pyridine, Quinoline, Sediment, Sediments, Transformation

Wehrheim, B. and Wettern, M. (1994), Biosorption of cadmium, copper and lead by isolated mother cell-walls and whole cells of chlorella-fusca. *Applied Microbiology and Biotechnology*, **41** (6), 725-728.

Full Text: [1994\App Mic Bio41, 725.pdf](1994/App%20Mic%20Bio41,%20725.pdf)

Abstract: Using a new method for the isolation of released mother cell walls of Chlorella fusca, the biosorption of cadmium, copper and lead by purified cell wall isolates and whole cell suspensions was comparatively characterized. In all cases whole cells accumulated more metal ions than isolated cell walls. Both the Langmuir and Freundlich isotherm models were suitable for describing the short-term adsorption of cadmium, copper and lead by cell walls and the cadmium and copper adsorption by whole cells. However, neither model could sufficiently explain the lead accumulation by whole cells. The feasibility of a practical use of whole cells or isolated cell walls as biosorbents is discussed.

Keywords: Heavy-Metals, Waste-Water, Adsorption, Vulgaris, Surfaces, Binding

? Lencki, R.W., Delaire, M. Tecante, A. and Choplin, L. (1995), Effect of ferric and cupric ions on the inactivation rate of dextransucrase. *Applied Microbiology and Biotechnology*, **42** (2-3), 263-269.

Full Text: [1994\App Mic Bio42, 263.pdf](1994/App%20Mic%20Bio42,%20263.pdf)

Abstract: When ferric ion was added to solutions of the enzyme dextransucrase, first-order followed by second-order inactivation behavior was observed. The initial rapid activity loss was attributed to a ferric ion interacting with the thiol group of the native monomer to form a less active enzyme-ion complex; the second inactivation stage involved enzyme-ion complex aggregation and disulfide cross-link formation. In contrast, Cu2+ ion inactivation demonstrated simple first-order kinetics. As with Fe3+, Cu2+ ions can form complexes with enzyme thiol groups. However, unlike ferric ions, cupric ions can also strongly interact with the imidazole ring of histidine. Since the dextransucrase active site contains two key histidines, imidazole–cupric-ion interactions could potentially inhibit enzymatic activity. Thus, it was hypothesized that first-order Cu2+ inactivation kinetics involved the adsorption of this ion to the enzyme’s activity site. The addition of a reducing agent such as dithiothreitol can inhibit the second enzyme aggregation stage by breaking disulfide cross-links but cannot restrict the initial formation of metal-enzyme complexes.

Volesky, B. and May-Phillips, H.A. (1995), Biosorption of heavy metals by *Saccharomyces cerevisiae*. *Applied Microbiology and Biotechnology*, **42** (5), 797-806.

Full Text: [1995\App Mic Bio42, 797.pdf](1995/App%20Mic%20Bio42,%20797.pdf)

Abstract: Abundant and common yeast biomass has been examined for its capacity to sequester heavy metals from dilute aqueous solutions. Live and nonliving biomass of *Saccharomyces cerevisiae* differs in the uptake of uranium, zinc and copper at the optimum pH 4-5. Culture growth conditions can influence the biosorbent metal uptake capacity which normally was: living and non-living brewer’s yeast: U > Zn > Cd > Cu; non-living baker’s yeast: Zn > (Cd) > U > Cu; living baker’s yeast: Zn > Cu ≈ (Cd) > U. Non-living brewer’s yeast biomass accumulated 0.58 mmolU/g. The best biosorbent of zinc was non-living baker’s yeast (≈ 0.56 mmol Zn/g). Dead cells of *S. cerevisiae* removed approximately 40% more uranium or zinc than the corresponding live cultures. Biosorption of uranium by *S. cerevisiae* was a rapid process reaching 60% of the final uptake value within the first 15 min of contact. Its deposition differing from that of other heavy metals more associated with the cell wall, uranium was deposited as fine needle-like crystals both on the inside and outside of the *S. cerevisiae* cells.

Keywords: Accumulation, Baker’s Yeast, Cadmium, Cells, Heavy Metals, *Saccharomyces Cerevisiae*, Uranium, Yeast

Bengtsson, L., Johansson, B., Hackett, T.J., McHale, L. and McHale, A.P. (1995), Studies on the biosoeption of uranium by *Talaromyces emersonii* CBS 814.70 biomass. *Applied Microbiology and Biotechnology*, **42** (5), 807-811.

Full Text: [1995\App Mic Bio42, 807.pdf](1995/App%20Mic%20Bio42,%20807.pdf)

Abstract: Residual biomass, produced by the thermophilic fungus, Talaromyces emersonii CBS814.70, following growth on glucose-containing media, was examined for its ability to take up uranium from aqueous solution. It was found that the biomass had a relatively high observed biosorption capacity for the uranium (280 mg/g dry weight biomass). The calculated maximum biosorption capacity obtained by fitting the data to a Langmuir model was calculated to be 323 mg uranium/g dry weight biomass. Pretreatment of the biomass with either dilute HCl or NaOH brought about a significant decrease in biosorptive capacity for uranium. Studies on the effects of variation in temperature on the biosorptive capacity demonstrated no significant change in binding between 20°C and 60°C. However, a significant decrease in biosorptive capacity was observed at 5°C. Binding of uranium to the biomass at all temperatures reached equilibrium within 2 min. While the routine binding assays were performed at pH 5.0, adjustment of the pH to 3.0 gave rise to a significant decrease in biosorption capacity by the biomass. The biosorptive capacity of the biomass for uranium was increased when extraction from solution in sea-water was examined.

Keywords: *Saccharomyces-Cerevisiae*, *Penicillium* Biomass, Accumulation, Cadmium, Arrhizus, Lead

? Rhee, S.K., Lee, G.M. and Lee, S.T. (1996), Influence of a supplementary carbon source on biodegradation of pyridine by freely suspended and immobilized *Pimelobacter* sp. *Applied Microbiology and Biotechnology*, **44** (6), 816-822.

Full Text: [1996\App Mic Bio44, 816.pdf](1996/App%20Mic%20Bio44,%20816.pdf)

Abstract: The effect of the presence of supplementary glucose or acetate on the growth and pyridine-degrading activity of freely suspended and calcium-alginate-immobilized Pimelobacter sp. was investigated. Although the supplementary carbon sources could be degraded simultaneously with pyridine, Pimelobacter sp. exhibited a preference for pyridine over supplementary carbon sources. Thus, the pyridine-degrading activity of the freely suspended cells was not decreased significantly by the addition of either glucose (1.5-6 mM) or acetate (6-24 mM) to the pyridine (6-24 mM). In the semi-continuous immobilized cell culture, immobilized cells also exhibited a preference for pyridine over supplementary carbon sources and did not switch their substrate preference throughout the culture. Owing to a high cell concentration, the volumetric pyridine degradation rate at 24 mM pyridine in the immobilized cell culture was approximately six times higher than that in the freely suspended cell culture. Furthermore, the immobilized cells could be reused 16 times without losing their pyridine-degrading activity during the culture period tested. Taken together, the use of immobilized Pimelobacter sp. for the degradation of pyridine is quite feasible because of the preference for pyridine over supplementary carbon sources, the high volumetric pyridine degradation rate, and the reusability of immobilized cells.

Keywords: 4-Chlorophenol, Acetate, Activity, Biodegradation, Calcium-Alginate, Carbon, Carbon Source, Cell Culture, Cells, Concentration, Continuous Degradation, Culture, Degradation, Derivatives, Glucose, Growth, Immobilized, Immobilized Cells, Organic Contaminants, Pentachlorophenol, Preference, Pseudomonas sp, Soil Suspensions, Source, Sources, Substrate, Waste-Water

? Matis, K.A., Zouboulis, A.I., Grigoriadou, A.A., Lazaridis, N.K. and Ekateriniadou, L.V. (1996), Metal biosorption-flotation. Application to cadmium removal. *Applied Microbiology and Biotechnology*, **45** (4), 569-573.

Full Text: [1996\App Mic Bio45, 569.pdf](1996/App%20Mic%20Bio45,%20569.pdf)

Abstract: Biosorption, using suspended non-living biomass, and flotation (for consequent solid/liquid separation of the metal-loaded biomass) have been studied in the laboratory as a possible combined process, for the removal of toxic metals (i.e. cadmium) from dilute aqueous solutions. The various parameters of the process were investigated in depth, including re-use of biosorbent. A filter aid (contained in the biomass industrial waste used) was found not really to interfere. zeta-potential measurements of the aforementioned system were also carried out. Promising results were obtained during continuous-flow experiments. A flotation residence time of 4 min was achieved. Metal removal and suspended biomass recovery were generally over 95%.

Keywords: Biomass, Biosorbent, Cadmium, Flotation, Metals, Non-Living, Non-Living Biomass, Recovery, Zeta-Potential

? Fuchs, W., Schatzmayr, G. and Braun, R. (1997), Nitrate removal from drinking water using a membrane-fixed biofilm reactor. *Applied Microbiology and Biotechnology*, **48** (2), 267-274.

Full Text: [1997\App Mic Bio48, 267.pdf](1997/App%20Mic%20Bio48,%20267.pdf)

Abstract: Biological treatment of drinking water is a cost-effective alternative to conventional physico, chemical processes. A new concept was tested to overcome the main disadvantage of biological denitrification, the intensive post-treatment process to remove microorganisms and remnant carbon source. The biological reaction zone and carbon supply were separated from the raw water stream by a nitrate-permeable membrane. Denitrification takes place in a biofilm, which is immobilized at the membrane. In a series of bench-scale runs, different types of membranes and reactor configurations were investigated. The best denitrification rates achieved were 1230 mg NO3-N m-2 day-1. In one run, raw water containing 100 mg NO3- l-1 was completely freed from nitrate. The membrane and the attached biofilm also represent a barrier against the passage of the C source and nutrients into the raw water. At concentrations of 20 mg l-1 ethanol and 15 mg l-1 phosphate in the bioreactor no diffusion through the membrane into the treated water was observed. Without any post-treatment, the effluent met nearly all the relevant criteria for drinking water; only the colony count was slightly increased.

Keywords: Drinking Water, Microorganisms, Pseudomonas-Denitrificans Cells

Zhou, J.L. (1999), Zn biosorption by *Rhizopus Arrhizus* and other fungi. *Applied Microbiology and Biotechnology*, **51** (5), 686-693.

Full Text: [A\App Mic Bio51, 686.pdf](A/App%20Mic%20Bio51,%20686.pdf)

Abstract: Biosorption of zinc ions by inactivated fungal mycelia was studied. of the six fungal species, *Rhizopus Arrhizus*, *Mucor racemosus*, *Mycotypha africana*, *Aspergillus nidulans*, *Aspergillus Niger* and *Schizosaccharomyces pombe*, *R. Arrhizus* exhibited the highest capacity (Qmax = 213 µmolg-1 dry weight). Further experiments with different cellular fractions of *R. Arrhizus* showed that Zn was predominantly bound to cell-wall chitin and chitosan (Qmax = 312 µmolg-1 dry weight). Adsorption data were best modelled by the Langmuir isotherm, although they can be modelled by the Freundlich equation as well at relatively low aqueous concentrations. Biosorption generally decreased with increase in biosorbent particle size and its concentration. Low pH reduced Zn sorption, because of the strong competition from hydrogen ions for binding sites on fungi. The presence of ligands reduced metal uptake, chiefly by forming metal complexes of a less biosorbable nature.

Keywords: Aqueous-Solution, Humic-Acid, Biomass, Radionuclides, Adsorption, Desorption, Mechanism, Uranium, Removal, Copper

Sağ, Y., Kaya, A. and Kutsal, T. (2000), Lead, copper and zinc biosorption from bicomponent systems modelled by empirical Freundlich isotherm. *Applied Microbiology and Biotechnology*, **53** (3), 338-341.

Full Text: [A\App Mic Bio53, 338.pdf](A/App%20Mic%20Bio53,%20338.pdf)

Abstract: The biosorption of lead, copper and zinc ions on *Rhizopus Arrhizus* has been studied for three single-component and two binary systems. The equilibrium data have been analysed using the Freundlich adsorption model. The characteristic parameters for the Freundlich adsorption model have been determined and the competition coefficients for the competitive biosorption of Pb(II)-Cu(II) at pH 4.0 and 5.0, and Pb(II) Zn(II) at pH 5.0 have been calculated. For the individual single-component isotherms, lead has the highest biosorption capacity followed by copper, then zinc. The capacity of lead in the two binary systems is always significantly greater than those of the other metal ions, in agreement with the single-component data. Only a partial selectivity for copper ions has been obtained at pH 4.0.

Keywords: Adsorption-Isotherms, Equilibria, Metals

Lee, D.C., Park, C.J., Yang, J.E., Jeong, Y.H. and Rhee, H.I. (2000), Screening of hexavalent chromium biosorbent from marine algae. *Applied Microbiology and Biotechnology*, **54** (3), 445-448.

Full Text: [A\App Mic Bio54, 445.pdf](A/App%20Mic%20Bio54,%20445.pdf)

Abstract: A high-chromate-selective biosorbent with high adsorption capacity was sought by examining the chromate adsorption capacities of 48 species of red, brown, or green marine algae sampled from the east coast of Korea. Screening showed a red marine alga to have the most excellent adsorption characteristics among them, and it was identified as Pachymeniopsis sp. The period at which Pachymeniopsis sp. was sampled did not affect the adsorption capacity of the alga, but the optimum period for mass collection was April to May. The alga also showed high selectivity for chromate since its adsorption capacity for other heavy metal ions such as cadmium and manganese ions was relatively low. An investigation of the adsorption isotherm of dried powder of Pachymeniopsis sp. for chromate adsorption at 25°C showed a Langmuir-type dependence. The maximum chromate adsorption capacity of the selected alga was about 225 mg/g. Desorption of the adsorbed chromate from Pachymeniopsis sp. was done by treating the sample with 1 N NaOH. It was confirmed that ion exchange type adsorption was observed with an anion exchanger but not with a cation exchanger. It is therefore believed that the chromate adsorption is based on anionic exchange of Pachymeniopsis sp.

Keywords: Biosorption, Biomass, Cadmium, Cobalt, Reduction, Mechanism, Arrhizus, Mercury, Removal

Lee, D.C., Park, C.J., Yang, J.E., Jeong, Y.H. and Rhee, H.I. (2000), Screening of hexavalent chromium biosorbent from marine algae. *Applied Microbiology and Biotechnology*, **54** (4), 597-600.

Full Text: [A\App Mic Bio54, 597.pdf](A/App%20Mic%20Bio54,%20597.pdf)

Abstract: A highly chromate-selective biosorbent with high adsorption capacity was found by examining the chromate adsorption capacities of 48 species of red, brown, or green marine algae sampled from the east coast of Korea. As a result of screening, a red marine alga showed excellent adsorption characteristics. It was identified as Pachymeniopsis sp. The timing of the sampling of Pachymeniopsis sp. did not affect the adsorption capacity of the alga but the optimum period for mass collection was April-May. The alga also showed high selectivity for chromate and its adsorption capacity for other heavy metal ions such as cadmium and manganese was relatively low. An investigation of the adsorption isotherm of Pachymeniopsis sp. as a dried powder for chromate adsorption at 25 degreesC showed Langmuir-type dependence. The maximum chromate adsorption capacity of the selected alga was about 225 mg/g. The desorption of adsorbed chromate from Pachymeniopsis sp. was done by treating samples with 1 N NaOH. It was confirmed that ion exchange type adsorption was observed with anion exchangers but not with cation exchangers. Therefore it is believed that the chromate adsorption is based on the anionic exchange of Pachymeniopsis sp.

Keywords: *Enterobacter-Cloacae* Strain, Anaerobic Conditions, Biosorption, Biomass, Cadmium, Cobalt, Reduction, Mechanism, Arrhizus, Mercury

Mehta, S.K. and Gaur, J.P. (2001), Concurrent sorption of Ni2+ and Cu2+ by *Chlorella vulgaris* from a binary metal solution. *Applied Microbiology and Biotechnology*, **55** (3), 379-382.

Full Text: [A\App Mic Bio55, 379.pdf](A/App%20Mic%20Bio55,%20379.pdf)

Abstract: Kinetics and capacity of Ni2+ and Cu2+ sorption by *Chlorella vulgaris* were studied using single and binary metal solutions at various concentrations of these metal ions. The second-order rate law best described the kinetics of metal sorption from both single and binary metal systems. *C. Vulgaris* preferentially sorbed Cu2+ over Ni2+ in the binary system. In comparison to the single metal system, the amounts of Ni2+ and Cu2+ sorbed at equilibrium (qe) were respectively 73% and 25%, and the initial rate of sorption (h) was ca. 50% in the case of the binary metal system. The test metals inhibited sorption of each other, thereby indicating competition between Ni2+ and Cu2+ for sorption onto non-specific binding sites. The present study showed that *C. Vulgaris* has specific as well as non-specific sites for the binding of Ni2+ and Cu2+. Participation of these sites for sorption depended on the ratio of Ni2+ and Cu2+ in solution. The maximum metal sorption capacity of *C. Vulgaris* was 6.75 mmol g-1 from the binary metal solution at the tested biomass concentration (100 mg dry weight l-1). Total metal sorption was enhanced with increasing total concentration of both the metals up to 1.6 mM, beyond which a decrease occurred. Two-dimensional contour plots were successfully used for the first time for the evaluation of metal sorption potential.

Keywords: Heavy-Metal, Biosorption, Removal, Toxicity, Cobalt

Tsekova, K. and Ilieva, S. (2001), Copper removal from aqueous solution using *Aspergillus Niger* mycelia in free and polyurethane-bound form. *Applied Microbiology and Biotechnology*, **55** (5), 636-637.

Full Text: [A\App Mic Bio55, 636.pdf](A/App%20Mic%20Bio55,%20636.pdf)

Abstract: This study assesses the ability of mycelia of *Aspergillus Niger* B-77 (both free and immobilized on polyurethane foam) to remove copper from single-ion solution. All experiments were conducted using 0.5 mM solutions of CuSO4.5H2O. Mycelia immobilized on polyurethane foam cells showed a three-fold increase in uptake, compared with that of free cells. The efficiency of copper removal (mg Cu2+ removed/mg Cu2+ added) in a column system reached more than 99% before the break-through point was attained.

Keywords: Metal-Ions, Biosorption

? McMullan, G., Meehan, C., Conneely, A., Kirby, N., Robinson, T., Nigam, P., Banat, I.M., Marchant, R. and Smyth, W.E. (2001), Microbial decolourisation and degradation of textile dyes. *Applied Microbiology and Biotechnology*, **56** (1-2), 81-87.

Full Text: [2001\App Mic Bio56, 81.pdf](2001/App%20Mic%20Bio56,%2081.pdf)

Abstract: Dyes and dyestuffs find use in a wide range of industries but are of primary importance to textile manufacturing. Wastewater from the textile industry can contain a variety of polluting substances including dyes. Increasingly, environmental legislation is being imposed to control the release of dyes, in particular azo-based compounds, into the environment. The ability of microorganisms to decolourise and metabolise dyes has long been known, and the use of bioremediation based technologies for treating textile wastewater has attracted interest. Within this review, we investigate the mechanisms by which diverse categories of microorganisms, such as the white-rot fungi and anaerobic bacterial consortia, bring about the degradation of dyestuffs.

Keywords: Geotrichum-Candidum DEC-1, White-Rot Fungi, Streptomyces-Viridosporus T7A, Sulfonated Azo Dyes, sp Strain BN6, Phanerochaete-Chrysosporium, Intestinal Bacteria, Lignin Peroxidase, Redox Mediators, Decolorization

Deng, X. and Wilson, D.B. (2001), Bioaccumulation of mercury from wastewater by genetically engineered *Escherichia coli*. *Applied Microbiology and Biotechnology*, **56** (1-2), 276-279.

Full Text: [A\App Mic Bio56, 276.pdf](A/App%20Mic%20Bio56,%20276.pdf)

Abstract: Genetically engineered E. coli, which express both a Hg2+ transport system and metallothionein, were tested for their ability to remove mercury from wastewater. The wastewater contained more than ten different ions, including 2.58 mg/l mercury, and its pH was 9.6. Mercury uptake was faster from the wastewater than from distilled water, probably because of the higher ionic strength, as the high pH had little effect on mercury accumulation. EDTA also stimulated mercury uptake rather than inhibiting it. A hollow-fiber bioreactor was used to retain induced cells for continuous mercury uptake. The cells removed more than 99% of the mercury in the wastewater and the final amount of mercury accumulated was 26.8 mg/g cell dry weight, while none of the other ions were removed from the water. These results indicated that the induced cells had a high affinity and specificity for mercury.

Keywords: Heavy-Metals, Removal, Biosorption, Fiber, Microorganisms, Biomass

Dewettinck, T., Hulsbosch, W., Van Hege, K., Top, E.M. and Verstraete, W. (2001), Molecular fingerprinting of bacterial populations in groundwater and bottled mineral water. *Applied Microbiology and Biotechnology*, **57** (3), 412-418.

Full Text: [A\App Mic Bio57, 412.pdf](A/App%20Mic%20Bio57,%20412.pdf)

Abstract: Monitoring the hygienic quality of drinking waters by determining the concentration of fecal indicators with traditional plate count techniques suffers from important drawbacks. In this work, the potential of PCR-DGGE (polymerase chain reaction - denaturing gradient gel electrophoresis) analysis of 16S rDNA genes to fingerprint the bacterial populations of mineral water and groundwater was investigated. A rapid and simple pretreatment to concentrate and release bacterial DNA prior to PCR was explored. This pretreatment was successful for commercially bottled mineral water. For groundwater, an additional resuscitation step was required to obtain a PCR signal. It was clear that the groundwater under scrutiny contained a more diverse bacterial community than the mineral water. A comparison was made between four kinds of mineral waters and one sample of groundwater using the developed procedures. For each kind of water, bacterial populations cultured on R2A plates were also subjected to PCR-DGGE. Comparison of the fingerprints of the plated samples and the original samples suggested the presence of viable but nonculturable bacteria in the waters. The obtained cluster dendrogram indicated that each kind of water was characterized by a specific molecular fingerprint. The sensitivity of the whole of the procedure was between 104 and 105 cfu ml-1 as determined using a pure culture of *Escherichia* coli. The described PCR-DGGE method can constitute the basis of a new and interesting strategy to monitor in a relatively rapid way (less than 24 h) the bacterial quality of waters such as mineral water, groundwater and certain types of reclaimed water.

Keywords: 16S Ribosomal-Rna, Gradient Gel-Electrophoresis, Vibrio-Vulnificus, Community, Gene, Soil, Lake, PCR, Bacterioplankton, Microorganisms

Duran, R., Deschler, C., Precigou, S. and Goulas, P. (2002), Degradation of chlorophenols by Phanerochaete chrysosporium: Effect of 3,4-dichlorophenol on extracellular peroxidase activities. *Applied Microbiology and Biotechnology*, **59** (2-3), 284-288.

Full Text: [A\App Mic Bio59, 284.pdf](A/App%20Mic%20Bio59,%20284.pdf)

Abstract: Extracellular peroxidases play an important role in the degradation of chlorophenols by Phanerochaete chrysosporium. Depending on the moment of 3,4-dichlorophenol addition, the production of lignin peroxidase and manganese peroxidase in C-limited agitated cultures was affected in opposite ways. In cultures that received 3,4-dichlorophenol at the time of inoculation, fungal growth was reduced and peroxidases were not produced, whereas peroxidase activities were stabilized after 3,4-dichlorophenol addition to pregrown cultures. Further investigation revealed that mRNA encoding lignin peroxidase was not produced in cultures started with 3,4-dichlorophenol, suggesting that the onset of secondary metabolism was affected. In addition, the stabilization of lignin peroxidase activity was not the result of an activation of lignin peroxidase gene transcription, as shown by Northern blot experiments, but likely due to the inhibition of peroxidase degradation by extracellular proteases.

Keywords: Pentachlorophenol, Cultures, 2,4,6-Trichlorophenol, Biodegradation, Involvement, Fungi

Ozdemir, G. and Baysal, S.H. (2004), Chromium and aluminum biosorption on *Chryseomonas luteola* TEM05. *Applied Microbiology and Biotechnology*, **64** (4), 599-603.

Full Text: [A\App Mic Bio64, 599.pdf](A/App%20Mic%20Bio64,%20599.pdf)

Abstract: Cr(VI) and Al(III) are environmental pollutants that are frequently encountered together in industrial wastewaters, e.g., from mining iron-steel, metal cleaning, plating, metal processing, automobile parts, and the manufacturing and dye industries. In this work, several variables that affect the capacity for chromium and aluminum biosorption by Chryseomonas luteola TEM05 were studied, particularly the effects of pH, metal concentration and contact time. Optimum adsorption pH values of Cr(VI) and Al(III) were determined as 4.0 and 5.0, respectively. The biosorption equilibrium was described by Freundlich and Langmuir adsorption isotherms. The value of Q(o) appears to be significantly higher for the Al(III) C. luteola TEM05 system. Langmuir parameters of C. luteola TEM05 also indicated a maximum adsorption capacity of 55.2 mg g-1 for Al(III) and 3.0 mg g-1 for Cr(VI).

Keywords: Clinical Specimens, Pseudomonas, Vulgaris, Algae

? Chen, C. and Wang, J.L. (2007), Response of *Saccharomyces cerevisiae* to lead ion stress. *Applied Microbiology and Biotechnology*, **74** (3), 683-687.

Full Text: [2007\App Mic Bio74, 683.pdf](2007/App%20Mic%20Bio74,%20683.pdf)

Abstract: The response of Saccharomyces cerevisiae to different concentrations of Pb2+ was investigated. The results demonstrated that the growth of S. cerevisiae in the presence of Pb2+ showed a lag phase much longer than that in the absence of Pb2+. The inhibition was dependent upon Pb2+ concentrations. The Pb2+ at a concentration of 5 μM inhibited the microbial growth by approximately 30% with regard to control, whereas Pb2+ at concentration of 2 μM did not have a significant effect on the microbial growth. The existence of Pb2+ did not perturb cell-protein synthesis and there was a good correlation between dry cell weights and total protein content (R-2=0.98). The RNA/DNA ratio in the microbial cells varied with Pb2+ concentration and there was a significant positive correlation between Pb2+ concentration and the RNA/DNA ratio. The microbial assimilation of ammonium ion was inhibited by the presence of Pb2+ in the medium; when Pb2+ concentration was 10 μM, the microbial ammonium assimilation was inhibited about 50%, in comparison with the control experiment.

Keywords: Pb2+, *Saccharomyces cerevisiae*, Protein, Heavy Metal, RNA/DNA Ratio, Heavy-Metals, Brewers-Yeast, Biosorption, Biomass, Copper(II), Sorption, Removal, Pb(II)

? Bordel, S., Muñoz, R., Díaz, L.F. and Villaverde, S. (2007), New insights on toluene biodegradation by *Pseudomonas putida F1*: Influence of pollutant concentration and excreted metabolites. *Applied Microbiology and Biotechnology*, **74** (4), 857-866.

Full Text: [2007\App Mic Bio74, 857.pdf](2007/App%20Mic%20Bio74,%20857.pdf)

Abstract: The influence of toluene concentration on the specific growth rate, cellular yield, specific CO2, and metabolite production by *Pseudomonas putida F1* (*PpF1*) was investigated. Both cellular yield and specific CO2 production remained constant at 1.0±0.1 g biomass dry weight (DW) g−1 toluene and 1.91±0.31 g CO2 g−1 biomass, respectively, under the tested range of concentrations (2–250 mg toluene l−1). The specific growth rate increased up to 70 mg toluene l−1. Further increases in toluene concentration inhibited *PpF1* growth, although inhibitory concentrations were far from the application range of biological treatment processes. The specific ATP content increased with toluene concentration up to toluene concentrations of 170 mg l−1. 3-Methyl catechol (3-MC) was never detected in the cultivation medium despite being an intermediary in the TOD pathway. This suggested that the transformation from toluene to 3-MC was the limiting step in the biodegradation process. On the other hand, benzyl alcohol (BA) was produced from toluene in a side chain reaction. This is, to the best of our knowledge, the first reported case of methyl monoxygenation of toluene by *PpF1* not harboring the pWW0 TOL plasmid. In addition, the influence of 3-MC, BA, and *o*-cresol on toluene degradation was investigated respirometrically, showing that toluene-associated respiration was not significantly inhibited in the presence of 10–100 mg l−1 of the above-mentioned compounds.

Keywords: ATP Content, Gas Treatment, Metabolites, *Ppf1*, Toluene Biodegradation, Toxicity

? Chen, C. and Wang, J.L. (2007), Influence of metal ionic characteristics on their biosorption capacity by *Saccharomyces cerevisiae*. *Applied Microbiology and Biotechnology*, **74** (4), 911-917.

Full Text: [2007\App Mic Bio74, 911.pdf](2007/App%20Mic%20Bio74,%20911.pdf)

Abstract: The influence of metal ionic characteristics on their biosorption capacity was analyzed using quantitative structure-activity relationships model. The waste biomass of Saccharomyces cerevisiae was used as biosorbent to adsorb 10 kinds of metal ions, and their maximum biosorption capacity (q(max)) was determined by the Langmuir isotherm model. The values of q(max) decreased in the following order (in millimole per gram): Pb2+ (0.413) > Ag+ (0.385) > Cr3+ (0.247) > Cu2+ (0.161) > Zn2+ (0.148) > Cd2+ (0.137) > Co2+ (0.128) > Sr2+ (0.114) > Ni2+ (0.108) > Cs+ (0.092). Twenty-two parameters of physiochemical characteristics of metal ions were selected and correlated with q(max), i.e., OX, AN, r (angstrom), Delta IP (eV), Delta E-0 (V), X-m, vertical bar log K-OH vertical bar, X(m)(2)r, Z(2)/r, AN/Delta IP, sigma(rho), AR, AW, IP, AR/AW, Z/r(2), Z/AR(2), Z/r, Z/AR, Z\*(2)/r, Z\*, N. The linear regression analysis showed that the covalent index X(m)(2)r was correlated well with q(max) for all metal ions tested in the following equation: q(max) = 0.029 +/- 0.061 (X(m)(2)r) (R-2 = 0.70). It suggested that the greater the covalent index value of metal ion was, the greater the potential to form covalent bonds with biological ligands, such as sulphydryl, amino, carboxyl, hydroxyl groups, etc. on the biomass surface, and the higher the metal ion biosorption capacity was. Classification of metal ions, for divalent ion or for soft-hard ion could improve the linear relationship (R-2 = 0.89). The equation could be used to predict the biosorption capacity of metal ions.

Keywords: Biosorption, Ionic Characteristics, Saccharomyces Cerevisiae, QSAR, Microtox(R) Bioluminescence Assay, Ligand Binding Characteristics, Activity Relationships Qicars, Caenorhabditis-Elegans LC50, Rhizopus-Arrhizus Biomass, Relative Toxicity, Hard, Adsorption

? Yuan, X.Z., Ren, F.Y., Zeng, G.M., Zhong, H., Fu, H.Y., Liu, J. and Xu, X.M. (2007), Adsorption of surfactants on a Pseudomonas aeruginosa strain and the effect on cell surface lypohydrophilic property. *Applied Microbiology and Biotechnology*, **76** (5), 1189-1198.

Full Text: [2007\App Mic Bio76, 1189.pdf](2007/App%20Mic%20Bio76,%201189.pdf)

Abstract: The adsorption behavior of five surfactants, cetyltrimethylammonium bromide (CTAB), Triton X-100, Tween 80, sodium dodecyl sulfate (SDS), and rhamnolipid, on a Pseudomonas aeruginosa strain and the effect of temperature and ionic strength (IS) on the adsorption were studied. The change of cell surface lypohydrophilic property caused by surfactant adsorption was also investigated. The results showed that the adsorption kinetics of the surfactants on the cell followed the second-order law. CTAB adsorption was the fastest one under the experimental conditions, and it took longest for SDS adsorption to equilibrate because of electric repulsion. The adsorption of Triton X-100 and Tween 80 was characterized by short equilibration time, and rhamnolipid adsorption reached equilibrium in about 90 min. The adsorption isotherms of all the surfactants on the bacterium fitted Freundlich equation well, but the adsorption capacity and mode were variations for the surfactants as indicated by k and n parameters in the equations. The adsorption mode for all the surfactants except SDS is probably hydrophilic interaction because the adsorption totally turned the cell surface to be more hydrophobic. Neither the temperature nor the IS had significant effect on CTAB adsorption, but higher IS significantly enhanced SDS adsorption and modestly strengthened adsorption of Triton X-100, Tween 80, and rhamnolipid. Higher temperature strengthened adsorption of SDS but weakened the adsorption of Triton X-100, Tween 80, and rhamnolipid.

Keywords: Adsorption, Adsorption Behavior, Adsorption Capacity, Adsorption Isotherms, Adsorption Kinetics, Aqueous-Solution, Behavior, Biodegradation, Biosurfactant, Capacity, Cell Surface, Cetyltrimethylammonium Bromide, CTAB, Equations, Equilibrium, Experimental, Freundlich, Freundlich Equation, Hydrophilic, Hydrophobic, Hydrophobicity, Interaction, Ionic Strength, Isotherms, Kinetics, Law, Nonionic Surfactants, Parameters, Powdered Active-Carbon, Pseudomonas, Pseudomonas Aeruginosa, Rhamnolipid, SDS, Second Order, Sodium, Sodium Dodecyl Sulfate, Sodium Dodecyl-Sulfate, Soil, Strength, Sulfate, Surface, Surfactant, Surfactant Adsorption, Surfactants, Temperature, Time, Triton X-100, Water Interface

? Pan, R., Cao, L.X., Huang, H.W., Zhang, R.D. and Mo, Y. (2010), Biosorption of Cd, Cu, Pb, and Zn from aqueous solutions by the fruiting bodies of jelly fungi (*Tremella fuciformis and Auricularia polytricha*). *Applied Microbiology and Biotechnology*, **88** (4), 997-1005.

Full Text: [2010\App Mic Bio88, 997.pdf](2010/App%20Mic%20Bio88,%20997.pdf)

Abstract: In this study, dried and humid fruiting bodies of Tremella fuciformis and Auricularia polytricha were examined as cost-effective biosorbents in treatment of heavy metals (Cd2+, Cu2+, Pb2+, and Zn2+) in aqueous solution. The humid T. fuciformis showed the highest capacity to adsorb the four metals in the multi-metal solutions. The Pb2+ adsorption rates were 85.5%, 97.8%, 84.8%, and 91.0% by dried T. fuciformis, humid T. fuciformis, dried A. polytricha, and humid A. polytricha, respectively. The adsorption amount of Pb2+ by dried and humid T. fuciformis in Cd2+, Pb2+, Cu2+, Pb2+, Pb2+, Zn2+, Cd2+, Cu2+, Pb2+, and Cd2+, Zn2+, Pb2+ solutions were not lower than that in Pb2+ solutions. The results suggested that in humid T. fuciformis, Cd2+, Cu2+, and Zn2+ promoted the Pb2+ adsorption by the biomass. In the multi-metal solutions of Cd2+ + Cu2+ + Pb2+ + Zn2+, the adsorption amount and rates of the metals by all the test biosorbents were in the order of Pb2+ > Cu2+ > Zn2+ > Cd2+. Compared with the pseudo first-order model, the pseudo second-order model described the adsorption kinetics much better, indicating a two-step biosorption process. The present study confirmed that fruiting bodies of the jelly fungi should be useful for the treatment of wastewater containing Cd2+, Cu2+, Pb2+, and Zn2+.

Keywords: Adsorption, Adsorption Kinetics, Aqueous Solution, Aqueous Solutions, Auricularia Polytricha, Biomass, Biosorbents, Biosorption, Biosorption Fruiting Bodies, Bodies, Cadmium, Capacity, Cd, Cd2+, Copper Biosorption, Cost-Effective, Cu, Cu2+, First Order, First-Order Model, Heavy Metals, Heavy-Metals, Jelly Fungi, Kinetics, Lead, Lentinus-Edodes, Metals, Model, Mushrooms, Pb, Pb2+, Pb2+ Adsorption, Pseudo First Order, Pseudo First-Order, Pseudo Second Order, Pseudo Second-Order, Pseudo-First-Order, Pseudo-Second-Order, Rates, Removal, Second Order, Second-Order, Second-Order Model, Solution, Solutions, Treatment, Tremella Fuciformis, Trichoderma-Harzianum, Wastewater, Zn2+

# Title: Applied Numerical Mathematics

Full Journal Title: [Applied Numerical Mathematics](http://www.sciencedirect.com/science/journal/01689274)

ISO Abbreviated Title:

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Subject Categories:

: Impact Factor

? Araujo, A. and Duran, A. (2001), Error propagation in the numerical integration of solitary waves. The regularized long wave equation. *Applied Numerical Mathematics*, **36** (2-3), 197-217.

Full Text: [2001\App Num Mat36, 197.pdf](2001/App%20Num%20Mat36,%20197.pdf)

Abstract: We study the error propagation of time integrators of solitary wave solutions for the regularized long wave equation, u(t) + u(x) + 1/2(u(2))x - u(xxt) = 0, by using a geometric interpretation of these waves as relative equilibria. We show that the error growth is linear for schemes that preserve invariant quantities of the problem and quadratic for ‘nonconservative’ methods. Numerical experiments are presented, (C) 2001 IMACS. Published by Elsevier Science B.V. All rights reserved.

Keywords: Asymptotic Stability, Conservative Methods, Equilibria, Error, Error Propagation, Experiments, Growth, Hamiltonian Structure, Imac, Integration, Integrators, Methods, Model-Equations, Relative Equilibria, Rights, Science, Solitary Waves, Solutions, Symmetry Groups, Systems

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? Fitzpatrick, J.J. (2005), Self-citations and other reference matters. *Applied Nursing Research*, **18** (1), 1.

Full Text: [2005\App Nur Res18, 1.pdf](2005/App%20Nur%20Res18,%201.pdf)

# Title: Applied Occupational and Environmental Hygiene

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? van Wijngaarden, E. and Stewart, P.A. (2003), Critical literature review of determinants and levels of occupational benzene exposure for united states community-based case-control studies. *Applied Occupational and Environmental Hygiene*, **18** (9), 678-693.

Abstract: This article presents the results of an extensive literature review identifying the uses or occurrences of, and exposures to, benzene in a variety of industries for a community-based case-control study of childhood brain cancer in the United States and Canada. We focused on industries for which quantitative exposure data were identified in studies conducted in North America in the 1980s. Each industry was coded according to the 1987 Standard Industrial Classification (SIC) system. For each industry, information relevant to exposure assessment, including process descriptions, job titles, tasks, and work practices, was summarized when available. Estimates of probability and intensity of exposure, and our confidence in these estimates are presented. Arithmetic means (AMs), weighted for the number of measurements for each industry, were calculated based on measurement data from long-term (i.e., 60+ minutes) personal sampling; short-term or area samples were only used when no other data were available for a given industry. Industries for which no quantitative exposure levels were identified in the North American literature but for which information was found on benzene use are briefly described. Published exposure data indicate that workers in most industries in the 1980s experienced exposure levels below the current standard of 1 part per million (ppm), with a weighted AM of 0.33 ppm across all industries. Despite the longtime recognition of the hematological effects of benzene, little information was available on exposure levels and determinants for many industries with potential exposure. Nevertheless, this review may clarify some of the procedures involved in assessing occupational exposures in community-based studies and may aid in the interpretation of previous occupational studies that relied on job title or industry.

Keywords: Benzene, Exposure Assessment, Industries, Community-Based Studies, Epidemiology

# Title: Applied Organometallic Chemistry

Full Journal Title: [Applied Organometallic Chemistry](http://www3.interscience.wiley.com/cgi-bin/jtoc?ID=2676)

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Chemistry, Applied: Impact Factor 1.556, 10/55 (2000)

Chemistry, Inorganic & Nuclear: Impact Factor 1.556, / (2000)

? Santosa, S.J., Mokudai, H., Takahashi, M. and Tanaka, S. (1996), The distribution of arsenic compounds in the ocean: Biological activity in the surface zone and removal processes in the deep zone. *Applied Organometallic Chemistry*, **10** (9), 697-705.

Abstract: The vertical profies of inorganic arsenic [As(III)+As(V)], monomethylarsonic acid (MMAA) and dimethylarsinic acid (DMAA) were investigated at four sampling stations in the Pacific Ocean and a sampling station in the southern Tasman Sea, In addition, the concentrations of those compounds in surface waters of the Pacific Ocean and Tasman Sea have been determined.

The vertical profiles of inorganic arsenic showed the low concentrations in both the surface and deep/bottom zones, The depleted concentrations in the surface zone varied from 1000 to 1700 ng dm-3 and that in the deep/bottom zone varied from 1300 to 2050 ng dm-3, The maximum concentrations that varied from 1500 to 2450 ng dm-3 were usually observed at a depth of about 2000 m. Both MMAA and DMAA were observed throughout the water column at sampling stations in the north-western and equatorial regions of the Pacific Ocean, At the sampling station in the central northern Pacific gyre, DMAA was the only methylated arsenic compound observed throughout the water column, On the contrary, at the sampling station in the southern Tasman Sea, the only detected methylated arsenic compound throughout the water column was MMAA, Their vertical profiles showed maximum concentrations in the surface water which abruptly dropped with depth from 0 to 200 m, The concentration in the surface water was close to 10 ng dm-3 for MMAA and varied from 27 to 185 ng dm-3 for DMAA, At depths greater than 100 m, MMAA and DMAA were at comparable concentrations which varied from 0.7 to 14 ng dm-3. The low inorganic arsenic concentration in the surface zone was due to biological activity. This activity resulted in the uptake of As(V) and subsequent reduction and methylation to MMAA and DMAA, DMAA was the main predominant arsenic compound resulting from biological activity in surface waters. The low inorganic arsenic concentrations in the deep and bottom zones were likely to be caused by the adsorption of dissolved inorganic arsenic onto sinking particulates rich in iron and manganese oxides.

Keywords: Inorganic Arsenic, Monomethylarsonic Acid (MMAA), Dimethylarsinic Acid (DMAA), Arsenic Distribution, Pacific Ocean, Tasman Sea, Seawater, Trace-Element, Marine-Algae, Speciation, Estuary, Biogeochemistry, Waters, Cycle, Iron

# Title: Applied Physics Letters

Full Journal Title: [Applied Physics Letters](http://web.ebscohost.com/ehost/detail?vid=1&hid=9&sid=64b022de-b88a-498c-aa1b-636b23fbbe7f%40sessionmgr10&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=a9h&jid=7Y1)

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Physics, Applied: Impact Factor 4.049 (2003)

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Full Text: [1999\App Phy Let74, 2307.pdf](1999/App%20Phy%20Let74,%202307.pdf)

Abstract: Hydrogen adsorption on crystalline ropes of carbon single-walled nanotubes (SWNT) was found to exceed 8 wt.%, which is the highest capacity of any carbon material. Hydrogen is first adsorbed on the outer surfaces of the crystalline ropes. At pressures higher than about 40 bar at 80 K, however, a phase transition occurs where there is a separation of the individual SWNTs, and hydrogen is physisorbed on their exposed surfaces. The pressure of this phase transition provides a tube-tube cohesive energy for much of the material of 5 meV/C atom. This small cohesive energy is affected strongly by the quality of crystalline order in the ropes. (C) 1999 American Institute of Physics. [S0003-6951(99)04816-0].

Keywords: Graphite Nanofibers, Storage

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Full Text: [2001\App Phy Let78, 2449.pdf](2001/App%20Phy%20Let78,%202449.pdf)

Abstract: The friction behavior of a diamond-like carbon coating was studied in reciprocating sliding contact at speeds from 0.01 to 5 mm/s, in dry nitrogen. “Superlow” friction coefficients of 0.003-0.008 were obtained in continuous sliding at the higher speeds (>1 mm/s). However, friction coefficients rose to values typical of diamond-like carbon in dry and ambient air (0.01-0.1) at lower speeds (<0.5 mm/s) as well as in time-delayed, higher speed tests. The rise of the friction coefficients in both speed and time-delay tests was in good quantitative agreement with gas adsorption kinetics predicted by the Elovich equation for adsorption onto carbon. More generally, superlow friction could be sustained, suppressed, and recovered as a function of exposure time, demonstrating that duty cycle cannot be ignored when predicting performance of superlow friction coatings in devices. (C) 2001 American Institute of Physics.

Keywords: Wear, Films

Notes: highly cited

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Full Text: [2003\App Phy Let83, 1644.pdf](2003/App%20Phy%20Let83,%201644.pdf)

Abstract: Degradation of organic thin-film field-effect transistors (OTFTs) with pentacene as the active material has been studied. It was found that the field-effect mobility of the device decreased by 30% and the on/off current ratio decreased to one fifth after the OTFTs had been stored in atmosphere for 500 h. Through surface morphology analysis by atomic force microscopy and absorption analysis by infrared spectroscopy, it was found that the adsorption of H2O on the pentacene layer was the main reason for the degradation. Remarkable improvement in the device performance was achieved by device encapsulation with UV curable resin. (C) 2003 American Institute of Physics.

Keywords: Light-Emitting Devices

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Full Text: [2010\App Phy Let96, 052101.pdf](2010/App%20Phy%20Let96,%20052101.pdf)

Abstract: The hole concentration of hydrogen-terminated diamond surfaces was studied during exposure to different concentrations of NO2 gas. The hole concentration increased during adsorption of NO2 molecules on the diamond surface, and decreased when the exposure stopped and NO2 molecules desorbed from the surface. The increase in hole concentration can be directly linked to the NO2 concentration. The low NO2 concentration in air (similar to 20 ppb) is responsible the hole concentration normally measured in air, and with increasing NO2 concentration the maximum hole concentration increases even more. The time evolution of hole concentration was analyzed using the Elovich sorption model. Further analysis based on the Ritchie model indicated that an adsorbed NO2 molecule occupies two different surface sites. Temperature-dependent measurements indicate low activation energy between 0.1 and 0.2 eV.

Keywords: Activation, Activation Energy, Adsorption, Adsorption, Air, Analysis, Concentration, Conductivity, Desorption, Diamond, Elovich, Energy, Equation, Evolution, Exposure, Films, GHZ, Hole Density, Hydrogen, Kinetics, Mechanism, Model, Nitrogen Compounds, NO2, Sorption, Surface, Surfaces

# Title: Applied Radiation and Isotopes

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Radiology, Nuclear Medicine & Medical Imaging: Impact Factor 0.635, 7/81 (2001); Impact Factor 1.114, 69/90 (2008); Impact Factor 1.094 77/104 (2009)

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Full Text: 1986\App Rad Iso37, 501.pdf

Keywords: Adsorption, Zinc

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Full Text: 1986\App Rad Iso37, 1121.pdf

Keywords: Adsorption, Cobalt, Phosphate

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Full Text: 1987\App Rad Iso38, 289.pdf

Keywords: Adsorption, Nickel, Phosphate

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Full Text: 1987\App Rad Iso38, 541.pdf

Keywords: Adsorption, Chromate, Adsorption, England, Science

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Keywords: Adsorption, Hydroxyapatite

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Full Text: 1988\App Rad Iso39, 1121.pdf

Keywords: Cesium, Cobalt, Manganese, Radionuclides, Sorption

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Keywords: Adsorption, Complexes, Preparation

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Keywords: Adsorption, Alumina, Cesium, Porous

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Full Text: 1991\App Rad Iso42, 1177.pdf

Abstract: The kinetics of adsorption of iodide ions on chromium (IV) oxide has been studied as a function of concentration (10(-7)-10(-2) M), temperature (293-328 K) and pH value (3.2-11.2) of the adsorptive solution employing the radiotracer technique. The kinetics of adsorption of iodide ions follows the first order rate law and obeys the Freundlich isotherm. Exposure of the activated oxide adsorbent to neutrons and gamma-radiation from a (Ra-Be) neutron source having an integral neutron flux of 3.85 x 10(6) neutrons/cm2/s and associated with a nominal gamma-dose of ca 172 rads/h results in a nominal increase in the rate of uptake for 24 h irradiation and thereafter decreases substantially when the irradiation time is increased to 60 h. The kinetics of desorption of preadsorbed iodide ions on oxide surface in water as well as in potassium iodide solution also follows first order rate law, and amount released increases with the increase of temperature (303-323 K). The adsorption is deduced to be of the “activated” type.

Keywords: Adsorbent, Adsorption, Aqueous-Solutions, Chromium, Co(II), Desorption, Dioxide, Freundlich, Freundlich Isotherm, Interface, Irradiation, Isotherm, Kinetics, Nickel, Oxide, pH, Phosphate, Radiotracer, Sorption, Temperature, Uptake, Water

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Full Text: 1992\App Rad Iso43, 789.pdf

Abstract: The adsorption of iodide ions on titanium(IV) oxide powder has been investigated as a function of concentration (10(-7)-10(-12) M), temperature (303-328 K) and pH (1.9-11.9) of the adsorptive solution, employing the radiotracer technique. The rate of uptake of I- was fast initially, slowly decreased with time and finally reached a plateau within ca 6 h. The uptake of iodide ions follows first order kinetics, obeys the Freundlich isotherm and increases with the increase in concentration and decrease in temperature and pH of the adsorbate. Pretreatment of the oxide adsorbent with neutrons and gamma-radiations from a 300 mCi (Ra-Be) neutron source has been associated with decrease in the adsorption capacity of the oxide. The adsorption process involved in the present system is thought to be chemical (ion exchange type) in nature.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Aqueous-Solutions, Capacity, Desorption, Exchange, First Order Kinetics, Freundlich, Freundlich Isotherm, Ion Exchange, Isotherm, Kinetics, Oxide, pH, Pretreatment, Process, Radiotracer, System, Temperature, Uptake, Zinc

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Full Text: 1992\App Rad Iso43, 1223.pdf

Abstract: Adsorption of Zn(II) on clay minerals (kaolinite, montmorillonite and bentonite) has been investigated spectrophotometrically and radiometrically. Both techniques offered fairly consistent results in spite that different procedure was used to obtain adsorbed amount of Zn(II). Adsorption isotherms fit Freundlich type equation depending on pH value of each clay suspension. The adsorbed amount of Zn(II) increased with increasing pH value of the suspension. Remarkable effect of Mg(II) on Zn(II) adsorption was observed in the case of bentonite. The results obtained may be explained by considering different surface properties of individual clay minerals.

Keywords: Adsorption, Adsorption Isotherms, Bentonite, Cesium, Clay, Clay Minerals, Environment, Freundlich, Ions, Isotherms, Kaolinite, Minerals, Montmorillonite, pH, Properties, Radionuclides, Sorption, Zn(II)

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Full Text: 1992\App Rad Iso43, 1253.pdf

Abstract: The adsorption behaviour of Ba(II) on titanium(IV) oxide in an aqueous solution was studied by means of batch technique as a function of Ba(II) concentration, temperature and solution pH using Ba-140 as radiotracer. The results show that adsorption is essentially complete in ca 2 h and that the steady state values of adsorption at various concentrations agree well with the classical Freundlich isotherm and follow first order kinetics. The pH and temperature of the solution markedly affect the extent of adsorption. The nature and mechanism of adsorption are discussed.

Keywords: Adsorption, Aluminum, Batch, Batch Technique, Complete, First Order Kinetics, Freundlich, Freundlich Isotherm, Hydrous Oxides, Isotherm, Kinetics, Management, Mechanism, Oxide, pH, Point, Radiotracer, Removal, Temperature, Titanium(IV) Oxide, Water, Zero Charge

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Full Text: [1993\App Rad Iso44, 745.pdf](1993/App%20Rad%20Iso44,%20745.pdf)

Abstract: Seven different samples of a new inorganic ion exchanger lanthanum silicate have been prepared under varying conditions. Ion-exchange capacity, i.r., thermogravimetry and sorption of radionuclides have been studied. Separations of Fe-Cu, Fe-Co, Sr-Cs and Sr-Ru have been performed on columns of this ion exchanger.

Keywords: Behavior, Capacity, Cation-Exchanger, Fission-Products, Inorganic Ion Exchanger, Ion Exchange, Radionuclides, Separation, Sorption

? Liang, T.J., Hsu, C.N. and Liou, D.C. (1993), Modified Freundlich sorption of cesium and strontium on Wyoming Bentonite. *Applied Radiation and Isotopes*, **44** (9), 1205-1208.

Full Text: [1993\App Rad Iso44, 1205.pdf](1993/App%20Rad%20Iso44,%201205.pdf)

Abstract: Sorptions of cesium and strontium on natural Wyoming bentonite have been investigated. A modified two-stage Freundlich sorption model was proposed on the basis of such primary factors as temperature, pH value and nuclide concentration which influence the sorption behavior of bentonite, The dominant sorption mechanism of bentonite was observed here to be an ion-exchange reaction, while physical adsorption functioned in a minor role.

Keywords: Adsorption, Bentonite, Cesium, Exchange, Freundlich, Ion Exchange, Mechanism, Model, pH, Physical Adsorption, Sorption, Sorption Mechanism, Strontium, Temperature

? Hsu, C.N. and Chang, K.P. (1994), Sorption and desorption behavior of cesium on soil components. *Applied Radiation and Isotopes*, **45** (4), 433-437.

Full Text: [1994\App Rad Iso45, 433.pdf](1994/App%20Rad%20Iso45,%20433.pdf)

Abstract: The sorption desorption behaviors of Cs ion in the concentration region of 10(-9) to 10(-4) m-equiv mL-1 were studied using bentonite, humic acid and sand as well as their mixtures. The Cs cation was indicated from the results of desorption studies to have, to a large extent, been sorbed to the interlayer sites of bentonite in an irreversible manner, while the sorption of Cs on humic acid and sand was reversible. In the experiments with mixed sorbents, K(d) value decreased with increasing quantities of humic acid in the region where humic was below 6%; in addition, some sorption sites of bentonite were confirmed to have been blocked by humic acid. Humic acid, in the region where it is over 6%, would become the primary sorbent for Cs instead of bentonite, which would be blocked with humic acid.

Keywords: Bentonite, Cesium, Clay, Desorption, Humic Acid, Ions, Sand, Soil, Sorbent, Sorption, Strontium

? Iturbe, J.L. (1994), 222Rn adsorption on stainless-steel disks, analyzed by surface-barrier detectors. *Applied Radiation and Isotopes*, **45** (5), 634-636.

Full Text: [1994\App Rad Iso45, 634.pdf](1994/App%20Rad%20Iso45,%20634.pdf)

Abstract: Rn-222 was retained on stainless-steel discs after they were immersed in concentrated nitric acid, from Ra-226 electrodeposited on the discs. Part of the activity of Po-210, Po-218 and Po-214 was also retained and Rn-222 was eliminated from the discs using concentrated hydrochloric acid. It was observed in the spectra that Rn-222 was separated from Ra-226 and on the other hand, the polonium isotopes were separated from Rn-222 when both acids were used respectively.

Keywords: Acids, Activity, Adsorption, Hydrochloric Acid, Nitric Acid, Rn-222

? Hsu, C.N., Tsai, S.C. and Liang, S.M. (1994), Evaluation of diffusion parameters of radon in porous material by flow-through diffusion experiment. *Applied Radiation and Isotopes*, **45** (8), 845-850.

Full Text: [1994\App Rad Iso45, 845.pdf](1994/App%20Rad%20Iso45,%20845.pdf)

Abstract: The effectiveness of a material in reducing the fluence rate of Rn from soil was assessed in this study by using a flow-through diffusion experiment to evaluate the diffusion parameters-apparent diffusion coefficient and capacity factor-of radon (Rn) in a porous material. The diffusion process would be required to have already reached a steady state so that an accurate estimate of the diffusion parameters could be obtained. An improved method based on the nonlinear least-squares and Marquardt’s method (NLSM method) was proposed to provide more reliable analyses of experimental data than the graphical method. The NLSM method was confirmed by the experimental results to be capable of estimating the diffusion parameters, even if the process was transient. This method was also demonstrated to correlate sufficiently with the results by the conventional method while the process had already reached steady-state. Natural mordenite was employed in this study as a testing material because it has more effective sorption for noble gas than any other earthen material.

Keywords: Capacity, Data, Diffusion, Diffusion Coefficient, Mordenite, Porous, Process, Radon, Soil, Sorption

? Hsu, C.N., Liu, D.C. and Chuang, C.L. (1994), Equilibrium and kinetic sorption behaviors of cesium and strontium in soils. *Applied Radiation and Isotopes*, **45** (10), 981-985.

Full Text: [1994\App Rad Iso45, 981.pdf](1994/App%20Rad%20Iso45,%20981.pdf)

Abstract: The equilibrium and kinetic sorption of cesium and strontium was studied in some varieties of important-crude soil in Taiwan using the batch method. Cesium and strontium sorption data at 20 degrees C were fitted to the Freundlich and Langmuir sorption isotherms. Nonlinear isotherms were found, and the Freundlich isotherm provided a better fit of the ion equilibrium sorption than the Langmuir isotherm did for both soils. The linear sorption isotherm was feasible for Sr2+ sorption on both soils with an initial concentration <10(-4) N; however, Cs+ was not. Both nuclides sorptions on chosen soils indicated two mechanisms at least, and the sorption process is diffusion-controlled The sorption rate coefficients of Cs+ and Sr2+ of chosen soils at 25 degrees C were determined in this study. The free energy of Cs+ and Sr2+ sorption at dilute solution on given soils was calculated from Freundlich isotherm constant.

Keywords: Batch, Batch Method, Cesium, Data, Equilibrium, Freundlich, Freundlich Isotherm, Isotherm, Isotherms, Kinetic, Kinetic Sorption, Langmuir, Langmuir Isotherm, Mechanisms, Nonlinear, Nonlinear Isotherms, Process, Soil, Soils, Sorption, Sorption Isotherm, Sorption Isotherms, Strontium

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Full Text: [1995\App Rad Iso46, 1.pdf](1995/App%20Rad%20Iso46,%201.pdf)

Abstract: A new inorganic exchanger consisting of lanthanum ammonium oxalate (LAOX) has been prepared and studied, and application to the separation of U(IV) and U(VI) has been explored after measuring, by the batch exchange method, the distribution coefficients. A hydrochloric acid-acetic acid mixture represents the most appropriate medium, among those tested, for performing the separation. Sorption is negligible for U(VI) but is relevant for U(IV) and it can be ascribed to the formation of an insoluble lanthanum uranium and ammonium oxalate. Desorption is possible only be using as eluent a hot solution of EDTA.

Keywords: Ammonium, Batch, Chromatography, Desorption, Distribution Coefficients,? Liang, T.J. and Tsai, J.Y.C. (1995), Sorption kinetics of cesium on natural Mordenite. *Applied Radiation and Isotopes*, **46** (1), 7-12.

Full Text: [1995\App Rad Iso46, 7.pdf](1995/App%20Rad%20Iso46,%207.pdf)

Abstract: The characteristics of sorption kinetics of cesium on natural mordenite, including apparent rate constant, intraparticle diffusion coefficient and reaction mechanisms, were investigated in this study. The apparent rate constant of sorption, as derived from the semi-empirical Elovich equation, was indicated from the experimental results to be about 56.9 mu equiv . g(-1). s(-1). The rate-determining step of sorption reaction was identified as the intraparticle diffusion of cesium cation from the main channel to site B, which is located in the side void, through the side channel system of mordenite. The linear and nonlinear intraparticle diffusion coefficients of Cs+ were observed via calculation by the spherical diffusion model as being 4.7 x 10(-18) and 3.5 x 10(-18) m(2) . s(-1), respectively.

Keywords: Cations, Cesium, Diffusion, Diffusion Coefficient, Elovich, Elovich Equation, Intraparticle Diffusion, Kinetics, Mechanisms, Model, Mordenite, Rate Constant, Soils, Sorption, Sorption Kinetics, System

Mishra, S.P. and Singh, V.K. (1995), Radiotracer technique in adsorption study. II. adsorption of barium and strontium ions on hydrous ceric oxide. *Applied Radiation and Isotopes*, **46** (2), 75-81.

Full Text: [1995\App Rad Iso46, 75.pdf](1995/App%20Rad%20Iso46,%2075.pdf)

Abstract: Adsorption behavior of Ba and Sr ions on hydrous eerie oxide in aqueous solution has been studied as a function of concentration (10-2-10-7 M), temperature (303-333 K) and pH (7.24-11.42) of the adsorptive solution applying radiotracer technique. The kinetics of adsorption for both ions follows first-order rate law and agrees well with the classical Freundlich isotherm in the entire range of adsorptive concentration. The effect of temperature on the equilibrium adsorption values has been utilized to evaluate the change in standard thermodynamic quantities (viz. Delta H-0, Delta G(0) and Delta S-0). Pre-irradiation of adsorbent with neutrons (3.85×106 n cm-2 s-1) and gamma-radiations (ca 172 rad h-1) has practically no effect on the extent of adsorption for both the ions. The uptake process for both ions is found to be endothermic and irreversible in nature.

Keywords: Radioactive-Waste Management, Aqueous-Solutions, Efficient Removal, Exchangers, Cadmium, Behavior, Titanate, Capacity, Powder

Ahmad, S.H.S.S. (1995), Competitive adsorption of 90Sr on soil sediments, pure clay phases and feldspar minerals. *Applied Radiation and Isotopes*, **46** (5), 287-292.

Full Text: [1995\App Rad Iso46, 287.pdf](1995/App%20Rad%20Iso46,%20287.pdf)

Abstract: Study of the adsorption of 90Sr by a soil sediment, mineralogically pure clay phases and feldspar minerals as a function of ionic composition of Ca, Mg and Na has been conducted. It is shown that a theoretical slope value of −1 for a pure ion-exchange mechanism of strontium adsorption onto Ca-saturated clay is predicted. Experimentally determined slopes represent an average of adsorption on several different mineral surfaces having different relative affinities for strontium, calcium and magnesium. Strontium was found to be adsorbed to ion-exchange sites and calcium and magnesium cations were observed to be effective competitors for these sites. Pure clay minerals yielded adsorption coefficients from equations with slopes of −10. (C) 1995 Elsevier Science Ltd. All rights reserved.

Liu, D.C., Hsu, C.N. and Chuang, C.L. (1995), Ion-exchange and sorption kinetics of cesium and strontium in soils. *Applied Radiation and Isotopes*, **46** (9), 839-846.

Full Text: [1995\App Rad Iso46, 839.pdf](1995/App%20Rad%20Iso46,%20839.pdf)

Abstract: The characteristics of sorption kinetics of cesium and strontium were studied *via* the batch method for some varieties of important crude soils in Taiwan, i.e. sorption mechanism and intraparticle diffusion coefficients. Ion-exchange is the dominant reaction of Cs and Sr sorption for both soils chosen. In this study, the amount of exchanged cations was significantly affected by the mineral composition of soil. Experimental results indicated that monovalent cations were more exchangeable for Cs sorption and divalent cations were more exchangeable for Sr sorption on both soils. The rate limiting processes of Cs and Sr sorption reaction on chosen soils were film diffusion-controlled. The film diffusion coefficients of Cs+ (*D*FCs+) sorption on both soils were larger than those of strontium (*D*FSr2+), in addition, the ratio of is approximately equal to 4. The value revealed that the influence of ion charge on film diffusion is significant, and the film diffusion coefficient increases as the nuclide charge decreases. (C) 1995 Elsevier Science Ltd. All rights reserved.

? Mishra, S.P. and Singh, V.K. (1995), Radiotracer technique in adsorption study. 13. Adsorption of barium and strontium ions on chromium(IV) oxide powder. *Applied Radiation and Isotopes*, **46** (9), 847-853.

Full Text: [1995\App Rad Iso46, 847.pdf](1995/App%20Rad%20Iso46,%20847.pdf)

Abstract: The applicability of chromium(IV) oxide for efficient removal of barium and strontium ions from aqueous solutions by adsorption has been investigated. Lower concentrations of Ba2+, Sr2+ solutions with higher pH and temperature were found to be favourable conditions for adsorption of Ba(II) and Sr(II) on chromium(IV) oxide. The kinetics of adsorption of Ba(II) and Sr(II) follows essentially a first-order rate law with bulk ion concentration and obeys the Freundlich isotherm in the entire range of metal ion concentration (10(-2)-10(-7) M). The uptake process was found to be endothermic and irreversible in nature. Equilibrium adsorption values at different temperatures have been utilized to evaluate change in standard thermodynamic quantities (viz Delta H-0, Delta G(0) and Delta S-0). The adsorption of Ba(II) and Sr(II) ions were not significantly affected by the exposure of chromium(IV) oxide adsorbent to neutrons and gamma-radiations from a (Ra-Be) neutron source having an integral neutron flux of 3.85 x 10(6) neutron/cm(2)/s and associated with nominal gamma-dose of ca 172 rad/h.

Keywords: Adsorbent, Adsorption, Aqueous Solutions, Aqueous-Solutions, Barium, Co(II), Efficient Removal, Equilibrium, Equilibrium Adsorption, Exchangers, Freundlich, Freundlich Isotherm, Hydrous Oxides, Isotherm, Kinetics, Manganese Oxide, Metal-Ions, Oxide, pH, Process, Radioactive-Waste Management, Removal, Sorption, Strontium, Temperature, Thermodynamic, Thermodynamic Quantities, Titanate, Uptake

? Cooper, E.L., Haas, M.K. and Mattie, J.F. (1995), Studies of the speciation of plutonium and ether actinides in natural groundwater using anion-exchange resin. *Applied Radiation and Isotopes*, **46** (11), 1159-1173.

Full Text: [1995\App Rad Iso46, 1159.pdf](1995/App%20Rad%20Iso46,%201159.pdf)

Abstract: The chemical speciation of radionuclides can have a dramatic effect on mobility in groundwater, because sorption by soil depends on speciation. An anion exchange technique has been developed and used to study the chemical speciation of radionuclides in a contaminant plume originating from an infiltration pit used for managing low-level liquid wastes. The principle radionuclides present include H-3, Sr-90, Co-60 and Ru-106, but plutonium and other actinides are also present at very low levels. The major dissolved species of Co-60, Ru-106 and actinides in this plume are anionic and are strongly adsorbed by anion exchange resins. The anion exchange technique has been used to concentrate the anionic species from up to 6 L of groundwater and then chromatographically separate them by elution with salt and acid solutions. The development work focussed on Co-60 and Ru-106, which are easier to measure than the actinides. The same technique was subsequently used to concentrate and separate the anionic species of Np, Pu, Am and Cm isotopes in the plume. The technique can be used analytically to measure changes in radionuclide speciation. It can also be combined with other techniques, such as size exclusion chromatography, to further characterize species in fractions collected during separation.

Keywords: Canada, Co-60, Colloids, Development, Exchange, Groundwater, H-3, Migration, Mobility, Radionuclide, Radionuclides, Resin, Separation, Soil, Sorption, Speciation, Sr-90, Suspended Particles, Waters Determination, Review, Sediments, Techniques

? Pentreath, R.J. (1995), The Analysis of Pu in Environmental-Samples - A Brief Historical-Perspective. *Applied Radiation and Isotopes*, **46** (11), 1279-1285.

Full Text: [1995\App Rad Iso46, 1279.pdf](1995/App%20Rad%20Iso46,%201279.pdf)

Abstract: Since its discovery half a century ago, plutonium has become the one element which almost everyone has heard about. It is one of the most thoroughly studied, and yet remains one of the most misunderstood. Its environmental occurrence has been pursued with unusual thoroughness and, in common with many other analytical developments, this pursuit has to some extent progressed at a rate dictated by developments in related fields, particularly electronics. But of greater interest is the fact that our considerable yet incomplete knowledge of the distribution of plutonium in the environment has resulted from a unique iterative progression of analytical ingenuity and the need to interpret the behaviour of the element in widely different circumstances. Thus, having overcome the initial difficulties of measuring it at all in some media, and of therefore having to recover it from very large samples in some cases, attention turned to measuring specific isotope ratios and then to discovering the various chemical states of these isotopes. Techniques were developed to analyse plutonium in areas as far apart as hot and cold deserts to the bottom of the oceans. The identification of different chemical forms, their rates of change, and the effect this had on the adsorption of plutonium to different materials, was crucial to the development of predictions of the impacts of plutonium both now and in the future. The techniques which have been developed for this purpose include a wide range of extraction and clean-up procedures, the use of double-isotope tracers, a variety of counting methods plus direct and in situ measurements by :contact methods. And yet there is still much to be learned-which will require even more demanding analytical expertise-in order to manage safely the quantifies of plutonium which are continuing to arise through the nuclear industries. This paper gives a brief review of the progress to date in the analysis of plutonium in environmental materials.

Keywords: Actinides, Adsorption, Americium, Analysis, Development, Environment, Extraction, Irish Sea, Lake, Natural-Waters, Plutonium Speciation, Radiochemical Mishra, S.P., Singh, V.K. and Tiwari, D. (1996), Radiotracer technique in adsorption study: Part XIV. Efficient removal of mercury from aqueous solutions by hydrous zirconium oxide. *Applied Radiation and Isotopes*, **47** (1), 15-21.

Full Text: [1996\App Rad Iso47, 15.pdf](1996/App%20Rad%20Iso47,%2015.pdf)

Abstract: Adsorption of Hg(II) ions on synthetic hydrous zirconium oxide has been investigated as a function of contact time, Hg(II) concentration (10-3-10-8 M) and temperature (303-333 K). X-ray diffraction studies indicated the amorphous nature of the synthesized oxide. The relative change of uptake, i.e. percentage adsorption increases from 80.3 to 98.3% with the increase in dilution (from 1.0×10-3 to 1.0×10-8 M). The kinetics of the process follows first order rate law and obeys the Freundlich isotherm over the entire range for the bulk concentration of Hg(II). The uptake of Hg(II) increases with the increase in temperature from 303 to 333 K. Pre-irradiation of adsorbent with neutrons (3.85×106 n/cm2/s) and gamma-radiations (ca 1.72 Gy/h) has practically no effect on the extent of adsorption of Hg(II).

Fujiyoshi, R., Gomei, T. and Katayama, M. (1996), Sorption of Zn(II) on marine sediments by a sequential extraction-radiotracer technique. *Applied Radiation and Isotopes*, **47** (2), 165-169.

Full Text: [1996\App Rad Iso47, 165.pdf](1996/App%20Rad%20Iso47,%20165.pdf)

Abstract: The sorption behavior of Zn(II) on the mineral fractions of a marine sediment collected from Sagami Bay (Japan) was investigated using a sequential extraction-radiotracer technique. The extractions used were: (i) 1 M CH3COONH4; (II) 4×10−2 M NH2OHt.HCl/25% CH3COOH; (III) 30% H2O2(pH 2); and (IV) 7 M HNO3. The residues remaining after the chemical treatment were collected, and used for the sorption experiments with 65Zn(II) as a tracer. The sorption isotherms of 65Zn(II) on all the fractions except for one with a strong acid treatment fitted a Langmuir type equation. The capacities of the individual mineral fractions for 65Zn(II) sorption were estimated from the isotherms. Treatment with 7 M HNO3 removed almost all the sorptive sites for Zn(II) ions. (C) 1996 Elsevier Science Ltd. All rights reserved.

Hasany, S.M. and Chaudhary, M.H. (1996), Sorption potential of Hare River sand for the removal of antimony from acidic aqueous solution. *Applied Radiation and Isotopes*, **47** (4), 467-471.

Full Text: [1996\App Rad Iso47, 467.pdf](1996/App%20Rad%20Iso47,%20467.pdf)

Abstract: The sorption of antimony(V) from 9.55×10-7 to 9.55×10-5 moldm-3 on the sand of Haro river (10 mg-1g) has been investigated to optimize the maximum adsorption with respect to the selection of an appropriate electrolyte, shaking time, concentration of antimony and amount of sand. Maximum sorption of antimony (9.53×10-7 moldm-3) from 0.3 moldm-3 nitric acid solution has been achieved after 10 min shaking at a v/w ratio of 450 cm3g-1. Among the ions tested, EDTA, citrate, sulphite, thiosulphate, iodide, Zr(IV), tartrate and fluoride reduce the sorption drastically whereas Al(III) and Pb(II) enhance the sorption significantly. Under optimal conditions chosen for antimony, larger distribution ratios are obtained for Ru(III) and Ni(II) whereas Sn(IV), Cu(II) and Fe(III) have shown substantial sorption. Zn(II), Cs(I) and Cr(III) are sorbed to a lesser extent (<5%). These elements can be separated from Sb(V), Ni(II) and Ru(III) using this sand as a column bed. The sorption data followed Freundlich and D-R isotherms over the entire concentration range of antimony investigated. The values of 1/n = 0.7 and of A = 64.5 µmolg-1 have been computed for the sorption system. The D-R parameters yielded the values: Cm = 16.7 µmolg-1, B = -0.004195 mol2kJ-2 and E = 10.9 kJmol-1. The sorption on the sand can be exploited for the preconcentration and removal of trace concentrations of antimony including radioactive isotopes from aqueous solutions or natural waters as well as from industrial and radioactive process waste water.

Keywords: Adsorption, Technetium, Behavior, Minerals, Cr(VI)

? Marageh, M.G., Husain, S.W., Khanchi, A.R. and Ahmady, S.J. (1996), Sorption studies of radionuclides on a new ion exchanger: Cerium(III) silicate. *Applied Radiation and Isotopes*, **47** (5-6), 501-505.

Full Text: [1996\App Rad Iso47, 501.pdf](1996/App%20Rad%20Iso47,%20501.pdf)

Abstract: Eight different samples of a new inorganic ion-exchanger cerium(III) silicate have been prepared under varying conditions. Ion-exchange capacity, i.r., thermogravimetry and sorption of radionuclides have been studied. Separations of Sr-85-(SC)-S-46, Nd-147-Th-232 and Nd-147-(?)(235+/-238)U have been developed on columns of this ion-exchanger.

Keywords: Behavior, Capacity, Cation-Exchanger, Inorganic Ion Exchanger, Ion Exchange, Radionuclides, Sorption

? Kolics, A. and Horȧnyi, G. (1996), Potentialities of a version of the radiotracer ‘foil’ (Joliot) method for sorption studies based on the measurements of X-radiation. *Applied Radiation and Isotopes*, **47** (5-6), 551-561.

Full Text: [1996\App Rad Iso47, 551.pdf](1996/App%20Rad%20Iso47,%20551.pdf)

Abstract: The radiochemical basis of the application of low energy X-radiation emitting tracers for adsorption studies by the in situ radiotracer ‘foil’ method are analyzed. The optimal X-radiation energy, the effect of higher energy gamma-radiation and the influence of solution thickness on the energy spectra are discussed. Some illustrative results on Co-57 labeled cobalt accumulation on gold are presented as a proof the applicability of the technique.

Keywords: Adsorption, Cobalt, Gold, Radiotracer, Sorption

Sapozhnikov, Yu.A., Kalmykov, S.N., Efimov, I.P. and Remez, V.P. (1996), The Sorption of 90Sr from natural waters by alginates. *Applied Radiation and Isotopes*, **47** (9-10), 887-888.

Full Text: [1996\App Rad Iso47, 887.pdf](1996/App%20Rad%20Iso47,%20887.pdf)

Abstract: The analytical applications of alginates, obtained from the marine algae *Laminaria*, for the pre-concentration of 90Sr from natural waters was studied. The sorption capacity for strontium in the samples investigated reached 30 mmol kg−1. The alginate sorbents were tested with sea water from the north-western part of the Black Sea over a wide range of salinity. The limit of detection for 90Sr in sea water with a salinity of 15 < 1 mBq dm−3. The sorbents described are waste products of alginate manufacture and have a relatively low cost which considerably reduces the total costs of the analysis. (C) 1996 Elsevier Science Ltd. All rights reserved.

Hasany, S.M. and Khurshid, S.J. (1997), Sorption of europium by Haro river sand in aqueous solution. *Applied Radiation and Isotopes*, **48** (1), 143-146.

Full Text: [1997\App Rad Iso48, 143.pdf](1997/App%20Rad%20Iso48,%20143.pdf)

Abstract: The sorption of Eu(III) on Haro river sand has been investigated. Influences include composition of the sorptive medium, the concentration of sorbent and sorbate, and shaking time. Haro river sand can be exploited for the preconcentration and removal of europium from very dilute solutions, for the decontamination and treatment of radioactive waste water and effluents from nuclear installations. (C) 1997 Elsevier Science Ltd. All rights reserved.

Mishra, S.P., Singh, V.K. and Tiwari, D. (1997), Radiotracer technique in adsorption study XVI: An efficient removal of cadmium ions by sodium titanate from aqueous solutions. *Applied Radiation and Isotopes*, **48** (4), 435-440.

Full Text: [1997\App Rad Iso48, 435.pdf](1997/App%20Rad%20Iso48,%20435.pdf)

Abstract: The uptake of Cd(II) ions on synthesized sodium titanate at different pH values (3.5-10.2), adsorbate concentrations (10−2−10−8 M) and temperatures (303-333 K) has been studied using the radiotracer technique. The results show that the uptake follows first order rate law and equilibrium data fitted well for Freundlich adsorption isotherm. A change in temperature does not affect markedly the uptake of Cd(II) ions; however, it is greatly influenced by the presence of diverse ions like Ba2+, Ca2+, Sr2+, Hg2+, Zn2+, Na+, K+ and complexing agents like acetate, phosphate, oxalate and EDTA. Radiation stability of sodium titanate was also assessed by exposing it to neutrons and gamma rays from a 11.1 GBq (Ra-Be) neutron source having an integral neutron flux of 3.85×106 n/cm2/s associated with γ-dose of 1.72 Gy/h as also using a Gamma cell (4.66 kGy/h). The increasing presence of acids (HCl and H2SO4) decreases the uptake of Cd(II) ions, however, practically no desorption takes place into the bulk at the studied pH (5.2) and temperature (303-333 K) which suggest irreversibility of the uptake of Cd(II) ions. (C) 1997 Elsevier Science Ltd. All rights reserved.

Hasany, S.M., Shamsi, A.M. and Rauf, M.A. (1997), Sorption of selenium at micromolar levels onto hydrous titanium oxide from aqueous solutions using radiotracer technique. *Applied Radiation and Isotopes*, **48** (5), 595-600.

Full Text: [1997\App Rad Iso48, 595.pdf](1997/App%20Rad%20Iso48,%20595.pdf)

Abstract: Titanium oxide (TiO2.2H2O) has been prepared and characterized by surface area, pore size and porosity measurements, thermal gravimetric analysis (TGA) and differential scanning calorimetry (DSC). The sorption of selenium(IV) at micromolar levels (7×10−8 − 7.09×10−6 M) onto titanium oxide has been studied in detail. The sorption is dependent upon the nature and concentration of electrolyte, sorbent and sorbate and on the equilibration time between the two. Maximum sorption of selenium is achieved from 0.01 M nitric acid solution at a 2/v ratio of 22.2 mg cm3 at 1.77×10−8 M selenium concentration. Only thiosulphate ions inhibit the sorption significantly whereas acetate, citrate, iodide, sodium and zinc ions cause relative enhancement in the sorption. Ag(I), Mn(II) and Co(II) have shown low sorption under optimal conditions chosen for selenium sorption. Titanium oxide can be used for the preconcentration of selenium and other elements having large *R*d values and their separation from Ag(I), Mn(II), and Co(II). Sorption capacity (86.7 ±7.3 mmol g−1), sorption free energy (9.41 ±0.67 kJ mol−1) and B(− 0.00564 ±0.00082 mol2 kJ−2) are evaluated for this system using linear regression analysis and D-R parameters. (C) 1997 Elsevier Science Ltd. All rights reserved.

Mishra, S.P., Tiwari, D. and Dubey, R.S. (1997), The uptake behaviour of rice (Jaya) husk in the removal of Zn(II) ions: A radiotracer study. *Applied Radiation and Isotopes*, **48** (7), 877-882.

Full Text: [1997\App Rad Iso48, 877.pdf](1997/App%20Rad%20Iso48,%20877.pdf)

Abstract: Sequestering of Zn(II) ions at the surface of rice husk has been studied as a function of contact time, adsorptive concentration, temperature and pH, using the radiotracer technique employing a Zn-65 radiotracer. A relatively slow uptake of metal ion increasing with bulk dilution (10-2 to 10-7 mol/dm3) was seen, which obeys the first-order rate law and agrees well with the classical Freundlich adsorption isotherm. The removal of metal ions from the bulk increases with the increase in pH (3.2-10.2) and temperature (293-323K) and evaluation of the thermodynamic data shows that the process involved is endothermic and apparently irreversible in nature, suggesting an ion exchange mechanism along with surface complexation. On the other hand Cd(II) was not adsorbed on the surface of the rice husk at pH 6.2. (C) 1997 Elsevier Science Ltd.

Keywords: Hyperaccumulator Thlaspi-Caerulescens, Aqueous-Solutions, Efficient Removal, Cadmium Uptake, Adsorption, Zinc, Adsorbents, Powder, Ba(II), Oxide

? Fujiyoshi, R., Hirashima, H. and Sawamura, S. (1998), Investigation of the sorption of Zn(II) on surface soils using a radiotracer technique. *Applied Radiation and Isotopes*, **49** (1-2), 1-4.

Full Text: [1998\App Rad Iso49, 1.pdf](1998/App%20Rad%20Iso49,%201.pdf)

Abstract: Radiometric sorption experiments were carried out on surface soil samples collected from several sites around Sapporo city (Hokkaido, Japan) in order to evaluate their capacities for the sorption of Zn(II). The maximum sorption (A(m)) of Zn(II), obtained from the sorption isotherm, was only 2-5% of the cation exchange capacity (CEC). The A(m) values were correlated with the pH of the soil suspensions, which indicates that zinc sorption would occur competitively with protons in the suspension. The effect of organic matter on the Zn(II) uptake was estimated from the A(m) change of individual samples before and after heat treatment. Coordinate uptake of the Zn(II) into the degrading organic matrices was believed not to be important for Zn(II) sorption in some of the present soil samples. (C) 1997 Elsevier Science Ltd. All rights reserved.

Keywords: Capacity, Cation Exchange, Cation Exchange Capacity, Exchange, Humic-Acid, Isotherm, Japan, Organic Matter, pH, Radiotracer, Science, Sediments, Soil, Soils, Sorption, Sorption Isotherm, Treatment, Uptake, Zinc, Zn(II)

Mishra, S.P. and Singh, V.K. (1998), Ion exchangers in radioactive waste management part X. Removal of barium ions from aqueous solutions by hydrous bismuth oxide using radiotracer technique. *Applied Radiation and Isotopes*, **49** (1-2), 43-48.

Full Text [1998\App Rad Iso49, 43.pdf](1998/App%20Rad%20Iso49,%2043.pdf)

Abstract: The uptake of barium ions at the micro and tracer concentration levels on synthesized bismuth oxide using the radiotracer technique has been studied and is found to be favoured at lower adsorptive concentrations and higher temperatures. The process follows a first order rate law with respect to the bulk ion concentration and obeys the Freundlich isotherm over the entire range of adsorptive concentration; the removal was found to increase with increasing pH. Based on thermodynamic data and the extremely low value of desorption, the process is confirmed to be irreversible in nature. Bismuth oxide does not exhibit any change in sorption characteristics due to irradiation with neutrons (3.85×106 neutrons/cm2/s) and gamma-rays (172 rad/h), showing it to be radiation stable. The findings suggest the possibility of using bismuth oxide in the treatment of radioactive wastes and effluents. (C) 1997 Elsevier Science Ltd. All rights reserved.

Keywords: Efficient Removal, Strontium Ions, Metal-Ions, Adsorption, Titanate, Powder, Immobilization, Antimony, Behavior, Cadmium

? Yu, K.N., Young, E.C.M. and Wong, T.H. (1998), Modelling the charcoal canister with a diffusion barrier by finite difference method. *Applied Radiation and Isotopes*, **49** (1-2), 49-53.

Full Text: [1998\App Rad Iso49, 49.pdf](1998/App%20Rad%20Iso49,%2049.pdf)

Abstract: The addition of a barrier can improve the performance of a charcoal canister in adsorption of radon since it takes up less water and more radon, and its integration time is longer. In this paper, we model the performance of a charcoal canister with a diffusion barrier by the finite difference method. The adsorption and diffusion effects, and the influence of water uptake are considered. Appropriate boundary conditions have also been determined. Using the implicit method of finite difference, the profile of radon concentration within the charcoal bed and the temporal change of adsorption of radon can be obtained. The results agree well with the experimental data. (C) 1997 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption, Air, Canister, Charcoal, Data, Diffusion, Diffusion Barrier, Finite Difference, Model, Modelling, Performance, Radon, Radon Gas, Science, Uptake, Water

Sohrabi, M. (1998), The state-of-the-art on worldwide studies in some environments with elevated naturally occurring radioactive materials (NORM). *Applied Radiation and Isotopes*, **49** (3), 169-188.

Full Text: [1998\App Rad Iso49, 169.pdf](1998/App%20Rad%20Iso49,%20169.pdf)

Abstract: Direct observations and studies of the radiobiological and epidemiological effects of ionizing radiation from naturally occurring radioactive materials (NORM) on man, in particular in areas with elevated NORM, are becoming of prime concern in radiation protection. This is due to existing discrepancies in the application of the linear no-threshold theory in obtaining radiation risks at low doses by extrapolation from high dose to low dose using dose and dose-rate effective factors. Many areas in the world have elevated NORM caused either by the geological and geochemical structure of the soil, or by the radioactive content of the water flowing from hot springs and/or due to technologically enhanced radioactivity as well as due to cosmic rays. Such areas, with relatively large cohort sizes, have been the subject of intensive dosimetry, radiobiological and epidemiological studies. It is the purpose of this article to review: sources of NORM and human exposure, needs and problems in study of areas with elevated NORM., the criteria for their classification; some areas with elevated NORM and the results of related studies, and some conclusions and recommendations for unification of an approach in future studies aimed at obtaining better estimates of human radiation risk factors from the effects of ionizing radiation.

? Chattopadhyay, S., Das, M.K., Sarkar, B.R. and Ramamoorthy, N. (1998), Radiometric studies on adsorption of iron on cation exchange resin and also of indium and gallium in presence of iron: Applicability to prepare 67Ga with low iron content. *Applied Radiation and Isotopes*, **49** (8), 899-902.

Full Text: [1998\App Rad Iso49, 899.pdf](1998/App%20Rad%20Iso49,%20899.pdf)

Abstract: The retention and elution of Fe(III) on Dowex-50 cation exchange column in cone. HCl medium was studied using Fe-59 as a tracer. Details of the retention/elution behaviour of trace quantities of In-114m and Ga-67 on Dowex-50 resin in the presence of various iron concentrations were also studied since the iron content altered the adsorption behaviour of Ga-67 and In-111 during chemical separation of these isotopes from irradiated target solutions. A method is reported to remove iron from the column by reduction of Fe(III) to Fe(II) on the Dowex-50 column itself with 1% NaI in cone. HCl or 0.1 N HCl and subsequent elution of the Fe(II) with conc. HCl. (C) 1998 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption, Cation Exchange, Exchange, Fe(II), In-111, Iron, Reduction, Resin, Retention, Science, Separation

Shahwan, T., Suzer, S. and Erten, H.N. (1998), Sorption studies of Cs+ and Ba2+ cations on magnesite. *Applied Radiation and Isotopes*, **49** (8), 915-921.

Full Text: [1998\App Rad Iso49, 915.pdf](1998/App%20Rad%20Iso49,%20915.pdf)

Abstract: The adsorption behavior of Cs+ and Ba2+ cations on magnesite has been studied as a function of time, cation concentration and temperature, utilizing both the radiotracer method and X-ray photoelectron spectroscopy (XPS). Saturation was approached in about 1 day for both cations. The sorption data were found to follow Freundlich type isotherms. Sorption of both Cs+ and Ba2+ cations were found to be exothermic in nature with ΔH° (kJ/mol) of -37, -13 and ΔS° (kJ/mol.K) of -0.09, -0.009, respectively. Negative ΔG° values were obtained for both cations, indicating the spontaneity of their sorption on magnesite. The magnitude of ΔG° suggest that ion exchange is the dominating sorption mechanism. (C) 1998 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption, Clay, Sr(II), Desorption, Behavior, Soils, pH

Mishra, S.P., Singh, V.K. and Tiwari, D. (1998), Radiotracer technique in adsorption study: Part XVII. Removal behaviour of alkali metal (K-and Li-) titanates for Cd(II). *Applied Radiation and Isotopes*, **49** (12), 1467-1475.

Full Text: [1998\App Rad Iso49, 1467.pdf](1998/App%20Rad%20Iso49,%201467.pdf)

Abstract: Alkali metal (potassium and lithium) titanates were synthesized and employed for the efficient removal of Cd(II) ions from aqueous solutions using the radiotracer technique. The possible mechanism involved at the solid/solution interface was deduced with the help of various physico-chemical data, i.e., effect of adsorptive concentration temperature and pH. The effect of added cations and H+ (HCl/H2SO4) in the uptake process was also seen. The radiation stability of these materials in the adsorption process was assessed by employing a 11.1 GBq (Ra-Be) neutron source having an integral neutron flux of 3.85×106 n.cm-2 s-1 and associated with a nominal gamma-dose of ca. 1.72 Gy/h.

? Marageh, M.G., Husain, S.W. and Khanchi, A.R. (1999), Selective sorption of radioactive cesium and strontium on stannic molybdophosphate ion exchanger. *Applied Radiation and Isotopes*, **50** (3), 459-465.

Full Text: [1999\App Rad Iso50, 459.pdf](1999/App%20Rad%20Iso50,%20459.pdf)

Abstract: A new inorganic ion exchanger stannic molybdophosphate has been prepared under varying conditions. Ion exchange capacity, I.R., thermogravimetry, and sorption behavior of radionuclides have been studied. Effect of concentration of sodium chloride, boric acid and pH on the sorption of cesium and strontium have also been studied. Decontamination of cesium and strontium from aqueous nuclear waste solution has been achieved. (C) 1999 Elsevier Science Ltd. All rights reserved.

Keywords: Boric Acid, Capacity, Cesium, Decontamination, Exchange, Inorganic Ion Exchanger, Ion Exchange, Nuclear Waste, pH, Radioactive, Radionuclides, Science, Selective Sorption, Silicate, Sodium Chloride, Sorption, Strontium

? Tiwari, D., Mishra, S.P., Mishra, M. and Dubey, R.S. (1999), Biosorptive behaviour of Mango (Mangifera indica) and Neem (Azadirachta indica) bark for Hg2+, Cr3+ and Cd2+ toxic ions from aqueous solutions: a radiotracer study. *Applied Radiation and Isotopes*, **50** (4), 631-642.

Full Text: [1999\App Rad Iso50, 631.pdf](1999/App%20Rad%20Iso50,%20631.pdf)

Abstract: Biosorption of Hg2+ and Cr3+ on dead biomass Mango (Mangifera indica) and Neem (Azadirachta indica) bark has been assessed at micro to tracer level concentrations from aqueous solutions employing the ‘radiotracer technique’. A high level of uptake of metal ions on these solid surfaces occurs within ca. 4 h of contact time reaching apparent saturation. The increase of sorptive concentration (10(-8) to 10(-2) mol dm(-3)), temperature (293-323 K) and pH (ca. 3 to 10) favoured the removal process of these ions; but in the case of Hg2+ on Neem bark, there was seemingly no temperature effect. The uptake process follows first order rate law and obeys the Freundlich adsorption isotherm. Added anions and cations in the bulk solution inhibit to some extent the removal of these toxic ions. Similarly the inhibition in the uptake was also observed when both biomasses were irradiated by neutron and gamma-rays prior to being employed as sorbents. No significant sorption of Cd2+ was observed on these dead biomass solid surfaces under various physical-chemical conditions. (C) 1999 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption, Adsorption Isotherm, Aqueous Solutions, Azadirachta Indica, Biomass, Biosorption, Cadmium, Cd2+, Contact Time, Copper, Freundlich, Freundlich Adsorption, Heavy-Metals, Hg2+, Inhibition, Isotherm, Metal Ions, pH, Process, Radiotracer, Removal, Saccharomyces-Cerevisiae, Science, Sorption, Surfaces, Temperature, Temperature Effect, Titanate, Toxic, Uptake, Uranium

? Faghihian, H., Marageh, M.G. and Kazemian, H. (1999), The use of clinoptilolite and its sodium form for removal of radioactive cesium, and strontium from nuclear wastewater and Pb2+, Ni2+, Cd2+, Ba2+ from municipal wastewater. *Applied Radiation and Isotopes*, **50** (4), 655-660.

Full Text: [1999\App Rad Iso50, 655.pdf](1999/App%20Rad%20Iso50,%20655.pdf)

Abstract: Three different samples of Iranian natural zeolites (clinoptilolite) and its sodium exchanged forms have been investigated for uptaking several different cations. Ion-exchange isotherms, have been given and discussed. (C) 1999 Elsevier Science Ltd. All rights reserved.

Tiwari, D., Mishra, S.P., Mishra, M. and Dubey, R.S. (1999), Biosorptive behaviour of Mango (*Mangifera indica*) and Neem (*Azadirachta indica*) bark for Hg2+, Cr3+ and Cd2+ toxic ions from aqueous solutions: A radiotracer study. *Applied Radiation and Isotopes*, **50** (4), 631-642.

Full Text: [1999\App Rad Iso50, 631.pdf](1999/App%20Rad%20Iso50,%20631.pdf)

Abstract: Biosorption of Hg2+ and Cr3+ on dead biomass Mango (*Mangifera indica*) and Neem (*Azadirachta indica*) bark has been assessed at micro to tracer level concentrations from aqueous solutions employing the ‘radiotracer technique’. A high level of uptake of metal ions on these solid surfaces occurs within ca. 4 h of contact time reaching apparent saturation. The increase of sorptive concentration (10-8 to 10-2 moldm-3), temperature (293-323 K) and pH (ca. 3 to 10) favoured the removal process of these ions; but in the case of Hg2+ on Neem bark, there was seemingly no temperature effect. The uptake process follows first order rate law and obeys the Freundlich adsorption isotherm. Added anions and cations in the bulk solution inhibit to some extent the removal of these toxic ions. Similarly the inhibition in the uptake was also observed when both biomasses were irradiated by neutron and gamma-rays prior to being employed as sorbents. No significant sorption of Cd2+ was observed on these dead biomass solid surfaces under various physical-chemical conditions. (C) 1999 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption, Adsorption Isotherm, and pH, Anions, Aqueous Solutions, Azadirachta Indica, Bark, Biomass, Biosorption, Cadmium, Cations, Cd2+, Concentration, Concentrations, Contact Time, Copper, First Order, Freundlich, Freundlich Adsorption Isotherm, Gamma Rays, Heavy-Metals, Hg2+, Inhibition, Ions, Isotherm, Law, Mango, Metal, Metal Ions, Order, pH, Physical-Chemical, Process, Radiotracer, Radiotracer Technique, Rate, Removal, Removal Process, Saccharomyces-Cerevisiae, Saturation, Solid Surfaces, Solutions, Sorbents, Sorption, Surfaces, Temperature, Temperature Effect, Time, Titanate, Toxic, Tracer, Uptake, Uranium

Ganzerli, M.T.V., Maggi, L. and Caramella, V.C. (1999), Thorium adsorption behaviour on mixed ammonium lanthanum oxalate, LAOX. *Applied Radiation and Isotopes*, **51** (1), 21-26.

Full Text: [1999\App Rad Iso51, 21.pdf](1999/App%20Rad%20Iso51,%2021.pdf)

Abstract: The cation-exchange properties of mixed ammonium lanthanum oxalate, LAOX, were studied by batch equilibration as a function of the concentration of some cations, such as alkaline earths or ammonium and of some anions and acids. The distribution coefficients for thorium are high, while U(VI) is not adsorbed over a large acidity range. Thus, the separation of thorium from uranium may be successfully carried out. The experimental conditions of adsorption, elution and recovery of thorium were investigated as well, by using chromatographic columns filled with LAOX, in order to set best the separation conditions from uranyl ions. Instrumental neutron activation analysis, ICP emission spectrometry and the UV spectrometry were used to evaluate the thorium, uranium and lanthanum concentrations. (C) 1999 Elsevier Science Ltd. All rights reserved.

Keywords: Inorganic Adsorbers, Thorium Separation, Lanthanum Oxalate

? Carroll, J., Boisson, F., Teyssie, J.L., King, S.E., Krosshavn, M., Carroll, M.L., Fowler, S.W., Povinec, P.P. and Baxter, M.S. (1999), Distribution coefficients (*K*d’s) for use in risk assessment models of the Kara Sea. *Applied Radiation and Isotopes*, **51** (1), 121-129.

Full Text: [1999\App Rad Iso51, 121.pdf](1999/App%20Rad%20Iso51,%20121.pdf)

Abstract: As a prerequisite for most evaluations of radionuclide transport pathways in marine systems, it is necessary to obtain basic information on the sorption potential of contaminants onto particulate matter. K-d values for use in modeling radionuclide dispersion in the Kara Sea have been determined as part of several international programs addressing the problem of radioactive debris residing in Arctic Seas. Field and laboratory K-d experiments were conducted for the following radionuclides associated with nuclear waste. americium, europium, plutonium, cobalt, cesium and strontium. Emphasis has been placed on two regions in the Kara Sea: (i) the Novaya Zemlya Trough (NZT) and (II) the mixing zones of the Ob and Yenisey Rivers (RMZ). Short-term batch K-d experiments were performed at-sea on ambient water column samples and on samples prepared both at-sea and in the laboratory by mixing filtered bottom water with small amounts of surficial bottom sediments (particle concentrations in samples = 1-30 mg/l). Within both regions, K-d values for individual radionuclides vary over two to three orders of magnitude. The relative particle affinities for radionuclides in the two regions are americium congruent to europium > plutonium > cobalt > cesium > strontium. The values determined in this study agree with minimum values given in the IAEA Technical Report [IAEA, 1985, Sediment K-d’s and Concentration Factors for Radionuclides in the Marine Environment. Technical Report No. 247. International Atomic Energy Agency, Vienna.]. Given the importance of K-d’s in assessments of critical transport pathways for radionuclide contaminants, we recommend that K-d ranges of values for specific elements rather than single mean values be incorporated into model simulations of radionuclide dispersion. (C) 1999 Elsevier Science Ltd. All rights reserved.

Keywords: Americium, Aquatic Systems, Arctic, Batch, Cesium, Cobalt, Dispersion, Distribution, Distribution Coefficients, Elements, Environment, Europium, K-D, K-D’S, Marine Sediments, Model, Modeling, Models, Nuclear Waste, Particles, Particulate Matter, Partition, Radioactive, Radionuclide, Radionuclides, Risk Assessment, Science, Seawater, Sediment, Sorption, Strontium, Transport, Water

Mishra, S.P. and Tiwary, D. (1999), Ion exchangers in radioactive waste management. Part XI. Removal of barium and strontium ions from aqueous solutions by hydrous ferric oxide. *Applied Radiation and Isotopes*, **51** (4), 359-366.

Full Text: [1999\App Rad Iso51, 359.pdf](1999/App%20Rad%20Iso51,%20359.pdf)

Abstract: The uptake of Ba(II) and Sr(II) by hydrous ferric oxide (HFO) was studied as a function of contact time, concentration, temperature and pH of the respective adsorptive solutions employing the ‘radiotracer technique’. The uptake of both the ions was found to increase with the increase in concentration, temperature and pH of the adsorptive solutions. Concentration dependence data fitted well to the Freundlich adsorption isotherm over the entire range of concentration (10-2-10-7 M) and the uptake process followed first-order rate kinetics. The desorption experiments demonstrate the irreversible nature of the uptake process, however, in the presence of H+ ions, i.e. on acidification, an appreciable amount of metal ions were removed in the bulk solution. The radiation stability of hydrous ferric oxide towards the uptake of Ba(II) and Sr(II) was also examined by using samples of hydrous ferric oxide irradiated by neutrons and gamma-rays prior to be employing as sorbents. The presence of some mono- and divalent co-ions along with the studied ions suppressed their removal appreciably. (C) 1999 Elsevier Science Ltd. All rights reserved.

Keywords: Barium, Strontium, Ion Exchange, Hydrous Ferric Oxide, Heavy-Metal Ions, Radiotracer Technique, Efficient Removal, Manganese Oxide, Cadmium Ions, Ceric Oxide, Adsorption, Behavior, Iron

Liang, T.J. (1999), The influence of cation concentration on the sorption of strontium on mordenite. *Applied Radiation and Isotopes*, **51** (5), 527-532.

Full Text: [1999\App Rad Iso51, 527.pdf](1999/App%20Rad%20Iso51,%20527.pdf)

Abstract: Buffer material plays a highly significant role in the conceptual design of engineering barrier systems, which are applied in radwaste disposal. In light of its universal and excellent sorption capabilities for many radionuclides, mordenite is a potential buffer material. Nevertheless, the concentrations of cations presented in groundwater, such as K+, Na+, Ca2+ and Mg2+, may cause competing reactions and influence the sorption behavior of mordenite considerably. The Freundlich sorption isotherm was employed to quantify the influences of various cations on the sorption of Sr2+ in terms of the specific sorption capability, *S*. For monovalent cations, such as K+ and Na+, *S* is proportional to ([Sr2+]/[A+]2)*n*, and for divalent cations, such as Ca2+ and Mg2+, *S* is proportional to ([Sr2+]/[B2+])*n*. (C) 1999 Elsevier Science Ltd. All rights reserved.

Keywords: Sorption, Strontium, Mordenite

? Khalid, M., Mushtaq, A. and Iqbal, M.Z. (2000), Separation of 111Ag from neutron irradiated natural palladium using alumina as an adsorbent. *Applied Radiation and Isotopes*, **52** (1), 19-22.

Full Text: [2000\App Rad Iso52, 19.pdf](2000/App%20Rad%20Iso52,%2019.pdf)

Abstract: A simple method is presented for the separation of no-carrier-added Ag-111 from neutron irradiated natural palladium. The method is based on sorption of Ag-111 in 0.01 M HCl on alumina. Palladium is removed by washing with 0.1 M HCl and the Ag-111 is eluted with 4 M HCl. The overall yields of Ag-111 are better than 85% with <1 mu g/ mi palladium as an impurity. The whole procedure from dissolving the target to the final Ag-111 solution takes about 2 h. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorbent, Alumina, Antibodies, Palladium, Science, Separation, Sorption

Khalid, N., Ahmad, S., Toheed, A. and Ahmed, J. (2000), Potential of rice husks for antimony removal. *Applied Radiation and Isotopes*, **52** (1), 31-38.

Full Text: [2000\App Rad Iso52, 31.pdf](2000/App%20Rad%20Iso52,%2031.pdf)

Abstract: The adsorption behavior of rice husks for antimony ions from aqueous solutions has been investigated as a function of appropriate electrolyte, equilibration time, hydrogen ions, amount of adsorbent, concentration of adsorbate, effect of diverse ions and temperature. The best conditions in which this material can be used as adsorbent have been explored. The radiotracer technique was employed to determine the distribution of antimony (122Sb) using a batch method. Maximum adsorption was observed at 0.01 mol L−1 acid solutions (HNO3, HCl, H2SO4 and HClO4) using 1.0 g of adsorbent for 1.92×10−5 mol L−1 antimony concentration in 10 min equilibration time. Studies show that the adsorption decreases with the increase in the concentrations of all the acids. The adsorption data follow the Freundlich isotherm over the range of 1.92×10−5 to 2.05×10−4 mol L−1 antimony concentration. The characteristic Freundlich constants i.e., 1/n = 0.82±0.05 and K = 4.61±0.07 m mol g−1 have been computed for the sorption system. The uptake of antimony increases with the rise in temperature (299–323 K). Thermodynamic quantities i.e., Δ*G*0, Δ*S*0 and Δ*H*0 have also been calculated for the system. The sorption process was found to be endothermic. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption, Antimony, Removal, Rice Husks

? Wang, X.K., Dong, W.M., Dai, X.X., Wang, A.X., Du, J.Z. and Tao, Z.Y. (2000), Sorption and desorption of Eu and Yb on alumina: Mechanisms and effect of fulvic acid. *Applied Radiation and Isotopes*, **52** (2), 165-173.

Full Text: [2000\App Rad Iso52, 165.pdf](2000/App%20Rad%20Iso52,%20165.pdf)

Abstract: The effects of pH, ionic strength and FA (fulvic acid) on the sorption and desorption of Eu(III) and Yb(III) on alumina were respectively investigated by using batch technique and radiotracers (152 +) Eu-154 and Yb-169. The distribution coefficients for sorption and desorption of Eu on alumina at pH 4.4, 4.6 and 5.7 in 1 mol/l NaCl solutions as a function of solid phase concentration were determined in the presence or absence of FA. The effects of pH, FA and ionic strength on the distribution coefficients for sorption and desorption of Yb on alumina were determined in 0.01-2.0 mol/l NaNO3. It was found that pH and FA influenced the sorption of Eu(III) and Yb(III) on alumina greatly. A surface hydrolysis model can satisfactorily and qualitatively explain the observations on bare alumina. The competition among the complexations of surface free hydroxyl groups, soluble and sorbed fulvic acids can satisfactorily and qualitatively explain the observations on the coated alumina. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Acids, Adsorption, Alumina, Batch, Batch Technique, Complexes, Desorption, Distribution Coefficients, Eu(III), Europium, Europium, Fa, Fulvic Acid, Fulvic Acids, Hydrolysis, Ionic Strength, Iron-Oxide, Mechanisms, Model, Nacl, Organic-Matter, pH, Science, Sorption, Sorption, Desorption, Ytterbium

? Wang, H.F., Takematsu, N. and Ambe, S. (2000), Effects of soil acidity on the uptake of trace elements in soybean and tomato plants. *Applied Radiation and Isotopes*, **52** (4), 803-811.

Full Text: [2000\App Rad Iso52, 803.pdf](2000/App%20Rad%20Iso52,%20803.pdf)

Abstract: The effects of soil acidity on the uptake of trace elements (Co, Zn, Se, :Rb, Sr, Y, Zr, Tc, Ru, Rh and Re) in soybean and tomato were studied by a multitracer technique. The soybean and tomato plants were cultivated on soils at pH 6.4 (normal soil) and 4.2 (acid soil) and administered with a multitracer for 15-60 d. In general, the uptake of cationic elements in the leaves and stems of soybean plants cultivated on acid soil became higher than those of plants cultivated on normal soil during the late period of growth. However, the effect of soil acidification on the uptake of the anionic element, Se, was quite different from that on the cationic elements. The uptake of Se by the plants cultivated on normal soil was higher than that of the plants cultivated on acid soil at all four harvest points. The uptake behavior of these elements in soybean was discussed in relation to their adsorption behavior on the same soil as was used for soybean cultivation. The growth of tomato plants was seriously affected by the soil acidity and lowering of uptake of elements was observed for the plants cultivated on acidified soil. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Absorption, Acid Rain, Acid Soil, Acidification, Adsorption, Behavior, Cationic, Cultivation, Growth, Metal-Ions, Multitracer, Multitracer, pH, Plants, Radionuclides, Rain, Ru, Science, Soil, Soils, Soybean, Technetium, Tomato, Trace Element, Trace Elements, Transport, Uptake, Zn

? Wang, X.K., Dong, W.M., Li, Z., Du, J.Z. and Tao, Z.Y. (2000), Sorption and desorption of radiocesium on red earth and its solid components: Relative contribution and hysteresis. *Applied Radiation and Isotopes*, **52** (4), 813-819.

Full Text: [2000\App Rad Iso52, 813.pdf](2000/App%20Rad%20Iso52,%20813.pdf)

Abstract: The relative contributions of organic matter and iron oxides to the Cs+ sorption on red earth were investigated by using the batch technique and selective extraction methods. The sorption and desorption isotherms and the distribution coefficients of Cs+ on the untreated red earth and the three treated soils to remove organic matter, iron oxides and organic matter plus iron oxides were determined at 20 degrees C, pH 6.3 +/- 0.2, in the presence of 0.01 mol/l CaCl2. It was found that all the isotherms are linear in the Cs+ concentration range used here, that the sorption-desorption hysteresis on the red earth actually occurs, and besides the clay minerals, the organic matter present in the red earth is a significant trap of Cs+ and is responsible for the hysteresis instead of the iron oxides. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Batch, Batch Technique, Calcareous Soil, Cesium, Clay, Clay Minerals, Contribution, Desorption, Distribution Coefficients, Extraction, Hysteresis, Iron, Isotherms, Minerals, Organic Matter, pH, Radiocesium, Red Earth, Science, Soils, Sorption, Strontium

? Tao, Z.Y., Wang, X.K., Dai, X.X. and Du, J.Z. (2000), Adsorption characteristics of 47 elements on a calcareous soil, a red earth and an alumina: A multitracer study. *Applied Radiation and Isotopes*, **52** (4), 821-829.

Full Text: [2000\App Rad Iso52, 821.pdf](2000/App%20Rad%20Iso52,%20821.pdf)

Abstract: The distribution coefficients, K-d of 47 elements from Na to Bi on a calcareous soil, a red earth and an alumina were, respectively, determined using a multitracer technique. The multitracer solution was prepared by irradiation of UO2(NO3)(2) with Ar-40 ion beam. It was found that there is a common general trend of variation in Kd for both soils and the alumina, i.e. all the shapes of plots of log K-d versus electron binding energy (I-z) are an ‘inverted V’, hence the important role of chemical interaction in the adsorption of trace inorganic cations, anions and neutral complexes on the soils and the oxides was demonstrated. For the alkali and alkaline earth elements, the common sequences of K-d values on the three adsorbents were Na+ < K+ < Rb+ < Cs+ (except for Rb+ on the alumina) and Mg2+ < Sr2+ < Ba2+ and accord with the sequences of effective ionic radii or single ion hydration enthalpies. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Acid, Adsorbents, Adsorption, Alumina, Background Electrolyte Ions, Calcareous Soil, Charge, Desorption, Distribution Coefficients, Interface, Irradiation, K-D, Multitracer, Multitracer Solution, pH, Red Earth, Science, Soil, Soils, Solid Components, Sorption, Surface, Trend

? Eyrolle, F. and Charmasson, S. (2000), Ultrafiltration of large volumes for the determination of colloidally bound artificial radionuclides in natural waters. *Applied Radiation and Isotopes*, **52** (4), 927-936.

Full Text: [2000\App Rad Iso52, 927.pdf](2000/App%20Rad%20Iso52,%20927.pdf)

Abstract: A methodology based on large volume ultrafiltration (> 1000 1) is developed in order to characterize the artificial radionuclides associated with the colloidal populations in natural waters. “Inorganic elements” and organic carbon sinks or sources due to sorption or post desorption within the ultrafiltration assembly/membranes of the Sartorius(R) system are underlined and discussed from methodological step experiments as well as recoveries obtained for artificial radionuclides such as Ru-106, Sb-125, Cs-137 and 239+240Pu fractionating natural waters from the Rhone River (France), its estuary and the Mediterranean Sea (Gulf of Lions). (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Artificial Radionuclides, Carbon, Colloids, Complexation, Copper, Cross-Flow Filtration, Desorption, Determination, Dissolved Organic-Carbon, Fractionation, Growth, Iron, Molecular-Weight, Natural Waters, Radionuclides, Science, Seawater, Sorption, System, Trace-Elements, Ultrafiltration, Volume

? Holm, E., Gӓfvert, T., Lindahl, P. and Roos, P. (2000), In situ sorption of technetium using activated carbon. *Applied Radiation and Isotopes*, **53** (1-2), 153-157.

Full Text: [2000\App Rad Iso53, 153.pdf](2000/App%20Rad%20Iso53,%20153.pdf)

Abstract: The sorption of technetium in pertechnetate form on carbon has been investigated. The sorption is pH dependent with maximal distribution coefficients, K-d, in the order of 10(6) at pH 2-4 for activated carbon with a grain size less than or equal to 100 mu m. The equilibrium time to reach such distribution coefficient was about 5 h at room temperature. The exact mechanisms for the sorption are not fully understood but reduction of Tc by the carbon might be an important process. Technetium can effectively and rapidly (5 l min(-1)) be sorbed from very large volumes (several hundred liters) of environmental waters on commercial cartridge filters impregnated with activated carbon. After incineration, the filters can be analyzed for Tc-99 by conventional methods. (C) 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Activated Carbon, Adsorption, Carbon, Distribution Coefficient, Distribution Coefficients, Environmental Waters, Equilibrium, Incineration, K-D, Mechanisms, Pertechnetate, pH, Process, Reduction, Science, Separation, Sorption, Tc-99, Technetium, Temperature

? Tsai, S.C., Ouyang, S. and Hsu, C.N. (2001), Sorption and diffusion behavior of Cs and Sr on Jih-Hsing bentonite. *Applied Radiation and Isotopes*, **54** (2), 209-215.

Full Text: [2001\App Rad Iso54, 209.pdf](2001/App%20Rad%20Iso54,%20209.pdf)

Abstract: Sorption and diffusion are important processes for the transport of radionuclides through buffer materials such as bentonite. In this study, the sorption and diffusion behaviors of Cs and Sr on Jih-Hsing bentonite are investigated using batch and through-diffusion techniques. The distribution coefficients (KdS) of Cs and Sr from batch experiments are approximately 1200 ml/g and 800 ml/g, respectively. It is found that the Freundlich isotherm model could fit the sorption isotherm with an equilibrium concentration of 10(-7)-10(-1) N. The calculated retardation factors (Rds) for samples at densities of 1.8 g/cm(3), 2.0 g/cm(3) and 2.2 g/cm(3) are 5685, 7744, and 11000 for Cs, and are 3790, 5162, and 7334 for Sr. For the through-diffusion experiments on the compacted samples with the same densities, the corresponding apparent diffusion coefficients for Cs are (2.83+/-0.75) x 10(-13)m(2)/s, (1.97+/-0.02)x 10(-13)m(2)/s, and (1.91+/-0.12) x 10(-13)m(2)/s, respectively. The corresponding apparent diffusion coefficients for Sr are (1.33 +/- 0.13) x 10(-13)m(2)/s, (1.51 +/- 0.15) x 10(-13)m(2)/s, and (1.34+/-0.10) x 10(-13)m(2)/s. The Rds obtained from the diffusion experiments for sample densities of 1.8 g/cm(3), 2.0 g/cm(3) and 2.2 g/cm(3) are 1166 +/- 355, 2113 +/- 123, 2796 +/- 171 for Cs, and 713 +/- 258, 510 +/- 68, 846 +/- 158 for Sr. It appears that the retardation factors obtained from the diffusion experiments are about one order of magnitude lower than those derived from the batch experiments. The discrepancy and the possible explanations are discussed in the paper. (C) 2001 Elsevier Science Ltd. All rights reserved.

Keywords: 2001, Batch, Bentonite, Cesium, Diffusion, Distribution Coefficients, Equilibrium, Freundlich, Freundlich Isotherm, Isotherm, Model, Processes, Radionuclides, Science, Sorption, Sorption Isotherm, Strontium, Transport

Dong, W.M., Guo, Z.J., Du, J.Z., Zheng, L.Y. and Tao, Z.Y. (2001), Sorption characteristics of zinc(II) by calcareous soil-radiotracer study. *Applied Radiation and Isotopes*, **54** (3), 371-375.

Full Text: [2001\App Rad Iso54, 371.pdf](2001/App%20Rad%20Iso54,%20371.pdf)

Abstract: Zn-65 was used as a radiotracer to study the sorption characteristics of zinc by two calcareous soils from Gansu Province (China). The sorption and desorption isotherms of Zn on two untreated calcareous soils and on two soils treated to remove CaCO3 were determined at 20±2°C, pH 7.8±0.2 in the presence of 0.001 mol/l CaCl2. The contribution of CaCO3 to the Zn sorption by the two calcareous soils was approximately 70% of the total amount sorbed and the sorption-desorption hysteresis was definitely demonstrated, thus the CaCO3 in calcareous soil is undoubtedly the most significant sink for zinc at high pH range. (C) 2001 Elsevier Science Ltd. All rights reserved.

Keywords: Zinc, Radiotracer, Sorption, Calcareous Soil, Isotherm, Sequential Extraction, Adsorption, Radionuclides, Environment, Components, Behavior, Zn(II)

? Dong, W.M., Wang, X.K., Bian, X.Y., Wang, A.X., Du, J.Z. and Tao, Z.Y. (2001), Comparative study on sorption/desorption of radioeuropium on alumina, bentonite and red earth: Effects of pH, ionic strength, fulvic acid, and iron oxides in red earth. *Applied Radiation and Isotopes*, **54** (4), 603-610.

Full Text: [2001\App Rad Iso55, 603.pdf](2001/App%20Rad%20Iso55,%20603.pdf)

Abstract: The sorption and desorption of Eu(III) as a representative of trivalent lanthanides and actinides on bentonite, alumina, red earth and red earth treated to remove free iron oxides were comparatively investigated by using botch technique and radiotracer Eu152+154. The effects of pH, ionic strength, fulvic acid, iron oxides in red earth and the sorption mechanism were also discussed. As compared to alumina and red earth, Eu(III) presents: a considerable distribution coefficient (K-d) onto bentonite. It was found that the pH and the presence of clay minerals are the main factors dominating the sorption/desorption characteristic of Eu3+ in the soil, and that a sorption-desorption hysteresis on bentonite and red earth actually occurs. Furthermore, the main sorption mechanism of lanthanides onto bentonite, alumina and red earth is the formation of bridged hydroxo complexes with the surface, and there are negative effects of fulvic acid and free iron oxides in red earth on the sorption of Eu(III). The results: of this paper indicate that the additivity rule on the sorption characteristic of a soil from the individual component’s characteristics is not general. (C) 2001 Elsevier Science Ltd. All rights reserved.

Keywords: 2001, Additivity, Adsorption, Alumina, Bentonite, Calcareous Soil, Clay, Clay Minerals, Complexes, Desorption, Distribution Coefficient, Eu(III), Europium, Europium, Fulvic Acid, Humic-Acid, Hysteresis, Ionic Strength, Iron, K-D, Mechanism, Minerals, pH, Radiotracer, Red Earth, Science, Soil, Solid Components, Sorption, Sorption Mechanism, Sorption, Desorption, Strontium

? Sasaki, T., Kauri, T. and Kudo, A. (2001), Effect of pH and temperature on the sorption of Np and Pa to mixed anaerobic bacteria. *Applied Radiation and Isotopes*, **55** (4), 427-431.

Full Text: [2001\App Rad Iso55, 427.pdf](2001/App%20Rad%20Iso55,%20427.pdf)

Abstract: While considering the geological disposal of radioactive wastes, the behaviour of the radionuclide Np and its daughter element Pa was investigated in the presence of a mixture of anaerobic bacteria (MAB). Originally, MAB were used for the treatment of pulp and paper wastewater. The interaction between radionuclides and bacteria was evaluated by determining distribution coefficients (K-d) over 10 days and at 5 degreesC and 35 degreesC. K-d for Np at 35 degreesC after 5 days had a low value around 10(-2). After 10 days, however, K-d was > 100-fold higher. On the other hand, Kd at 5 degreesC was low (10-2) throughout, without any significant increase over time. The interaction between Pa and MAB was found to be stronger than that for Np, with K-d for Pa about 100 times higher. The Kd was controlled by some basic factors; the activity of MAB, the complexing capacity of MAB, and the chemical conditions in the solution such as pH and Eh. (C) 2001 Elsevier Science Ltd. All rights reserved.

Keywords: 2001, Active, Activity, Anaerobic Bacteria, Bacteria, Behavior, Bioremediation, Capacity, Distribution Coefficient, Distribution Coefficients, Dormant, Effect of pH, Eh, K-D, Nagasaki A-Bomb, Neptunium, pH, Protactinium, Radioactive, Radionuclide, Radionuclides, Reduction, Science, Solubility, Sorption, Temperature, Treatment, Uranium, Wastewater

Ambe, S., Sekido, S., Ozaki, T. and Yamaguchi, I. (2002), Uptake of trace elements by rice plants inoculated with *Pyricularia oryzae*. *Applied Radiation and Isotopes*, **56** (3), 473-476.

Full Text: [2002\App Rad Iso56, 473.pdf](2002/App%20Rad%20Iso56,%20473.pdf)

Abstract: The ability of rice plants inoculated with *Pyricularia oryzae* (*P. oryzae*) to take up trace elements was studied by the radioactive multitracer technique. Among various elements, only Mn, Co, Zn, Se, Rb, Sr, Tc, and Re were found to be transferred to rice shoots from soil. The concentrations of essential elements, Mn and Zn, in the shoots of rice plants inoculated with *P. oryzae* were slightly higher than those in the control plant shoots, while Se, Rb, Tc, and Re showed almost the same concentrations for both the shoots. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Rice Plant, Pyricularia Oryzae, Rice Blast Disease, Uptake, Multitracer

? Shi, J.J., Guo, J.F. and Chen, H. (2002), Dynamics of 95Zr in the rice/water/soil system. *Applied Radiation and Isotopes*, **56** (5), 735-740.

Full Text: [2002\App Rad Iso56, 735.pdf](2002/App%20Rad%20Iso56,%20735.pdf)

Abstract: In order to get a better understanding of the environmental behavior of Zr-95 and to generate fundamental data for evaluation of its ecological risk. an experiment was conducted to study Zr-95 dynamics in a simulated rice/water/soil system. The results showed that the concentration of Zr-95 in surface water decreased rapidly with time due to precipitation, adsorption to soil and uptake by rice., and most of Zr-95 in soil was found concentrated in the surface layer (0-8 cm from surface), The Zr-95 could not readily move downwards with percolating water and remained in surface soil. The Zr-95 taken up from surface water and surface soil mainly concentrated in roots and lower parts of stem. The concentration of Zr-95 in upper part of stem and leaves were relatively lower, which were only slightly greater than the detection limit. The Zr-95 concentration in tassel was near the detection limit. The dynamics of Zr-95 concentrations in rice, water and soil can be described with exponential function. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption, Data, Dynamics, Evaluation, Modelling, Radioecology, Rice, Science, Soil, Soil, System, Uptake, Water, Zr-95

? Wang, X.K., Dong, W.M., Wang, G. and Tao, Z.Y. (2002), Sorption and desorption of Co(II) on alumina: mechanisms and effect of humic substances. *Applied Radiation and Isotopes*, **56** (6), 765-771.

Full Text: [2002\App Rad Iso56, 765.pdf](2002/App%20Rad%20Iso56,%20765.pdf)

Abstract: The effects of pH. ionic strength and humic substances on the sorption and desorption of Co(II) on alumina and silica were, respectively investigated by using radiotracer Co-60. The distribution coefficients, the breakthrough curves and the displacement curves were experimentally determined in the batch and the column experiments. The pH and the humic substances influenced the sorption of Co(II) on alumina greatly as compared with the sorption of Co(II) on silica. It was found that the sorption characteristics of Co(II) onto alumina and silica are distinctly different, that the strong chemical bonds are formed between the bare alumina surface and Co(II) and between the coated alumina surface and Co(II), and that a transition from the adsorption to the surface-induced precipitation of Co(II) on the bare alumina surface takes place. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption, Alumina, Batch, Breakthrough, Breakthrough Curves, Co(II), Co-60, Cobalt, Complex, Coverage, Desorption, Distribution Coefficients, Fulvic-Acids, Humic Substance, Humic Substances, Hydrolyzable Metal-Ions, Ionic Strength, Mechanisms, Model Systems, Oxide-Water Interface, pH, Radiotracer, Science, Silica, Sorption, Sorption, Desorption, Stability-Constants, Strategy, Surface Precipitation

? Dong, W.M., Li, W.J. and Tao, Z.Y. (2002), Use of the ion exchange method for the determination of stability constants of trivalent metal complexes with humic and fulvic acids II. Tb3+, Yb3+ and Gd3+ complexes in weakly alkaline conditions. *Applied Radiation and Isotopes*, **56** (6), 967-974.

Full Text: [2002\App Rad Iso56, 967.pdf](2002/App%20Rad%20Iso56,%20967.pdf)

Abstract: The conditional stability constants for tracer concentrations of Tb(III), Yb(III), and Gd(III) with three soil humic acids, three soil fulvic acids and a fulvic acid from weathered coal were determined at pH 9.0-9.1 (these values are similar to those in calcareous soils) in the presence of NaHCO3 by using the anion exchange method. It A as found that 1 : 1 and 1 : 2 complexes were simultaneously formed in the weakly alkaline conditions. The conditional stability constants of these 1 : 1 and 1 : 2 complexes were calculated from the distribution coefficients of rare earth elements at various concentrations of humate or fulvate. The stability constants indicate the very high stability of trivalent Tb 3 1, Yb3+ and Gd3+ complexes with humic substances in weakly alkaline conditions. The key parameters necessary for the experimental determination of the conditional stability constants of metal ions with humic substances in the presence of NaHCO3 by using an anion exchange method were discussed, The conditional stability constants of these 1 : 1 and 1 :2 complexes were compared in this paper. It was found that stabilities of Tb3+ 1 : 1 and 1 :2 complexes with humic acid are greater than the corresponding ones with fulvic acid from the same soil. In addition, the effect of the presence of Ca2+ as a competitor on the stabilities of 1 : 1 and 1 : 2 complexes of Yb was examined and no pronounced change of stabilities of 1 : 1 complex was found, even though Ca2+ is in a 10(3) excess to Yb3+. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Tb(III), Yb(III), Gd(III), Humic Acid, Fulvic Acid, Complexation, Stability Constants, Anion Exchange, Nuclear-Magnetic-Resonance, Europium Binding, Uranyl Ions

Liu, N., Yang, Y.Y., Luo, S.Z., Zhang, T.M., Jin, J.N., Liao, J.L. and Hua, X.F. (2002), Biosorption of 241Am by *Rhizopus arrihizus*: Preliminary investigation and evaluation. *Applied Radiation and Isotopes*, **57** (2), 139-143.

Full Text: [2002\App Rad Iso57, 139.pdf](2002/App%20Rad%20Iso57,%20139.pdf)

Abstract: The biosorption of 241Am from solution by a fungus—*Rhizopus Arrihizus* (*R. arrihizus*), and the effect of experimental conditions on the adsorption were investigated. The preliminary results showed that the biosorption of 241Am by *R. arrihizus* is very efficient. An average of more than 99% of the total 241Am was removed by *R. arrihizus* of 1.3 g/l (dry weight) from 241Am solutions of 5.6–111 MBq/l (44.3–877.2 μg/l) (*C0*), with adsorption capacities (*W*) of 4.2–79.4 MBq/g biomass (dry weight) (33.2–627.5 μg/g). The biosorption equilibrium was achieved within 1h and the optimum pH ranged from 1 to 3. No significant differences in 241Am biosorption were observed at 10–45°C, or in solutions containing Au3+ or Ag+, even 2000 times above 241Am concentration. The relationship between concentrations and adsorption capacities of 241Am indicated that the 241Am biosorption by *R. arrihizus* obeys the Freundlich adsorption equation. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Radionuclides, 241Am, *Rhizopus arrihizus*, Biosorption

? Braker, A.H., Moet, F.P., van der Zwart, R.E., Eersels, J.L.H. and Herscheid, J.D.M. (2002), Adsorption of radioiodine on platinum: A fast and simple column method to obtain concentrated and pure radioiodide in either water or anhydrous solvents. *Applied Radiation and Isotopes*, **57** (4), 475-482.

Full Text: [2002\App Rad Iso57, 475.pdf](2002/App%20Rad%20Iso57,%20475.pdf)

Abstract: Radioiodine can be adsorbed on a small column filled with platinum powder from an acidified aqueous solution. The adsorption is nearly quantitative, irrespective of the oxidation state of the iodine used. With an alternated flow of hydrogen gas and solvent, the iodine can be desorbed from the platinum into an aqueous or organic solvent. Depending on the solvent used, the desorption process is also nearly quantitative, and the eluate obtained contains almost pure radioiodide. Using this method, labelling reactions with radioiodide are no longer restricted to water-stable substrates and catalysts. (C) 2002 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption, Desorption, Hydrogen, Oxidation, Platinum, Process, Radioiodine, Science, Water, Water-Free Radioiodide

Kilislioglu, A. and Bilgin, B. (2003), Thermodynamic and kinetic investigations of uranium adsorption on amberlite IR-118H resin. *Applied Radiation and Isotopes*, **58** (2), 155-160.

Full Text: [2008\App Rad Iso58, 155.pdf](2008/App%20Rad%20Iso58,%20155.pdf)

Abstract: The adsorption behavior of uranium(VI) on a strongly acidic cation exchanger amberlite IR-118H has been studied as a function of the solution concentration and temperature. Results have been analyzed by Langmuir and Dubinin–Radushkevich (D–R) adsorption isotherms. The mean energy of adsorption 7.14 kJ mol-1 was calculated from the D–R adsorption isotherm. In order to understand the significance of the diffusion mechanisms and to accurately estimate the diffusivities inside the adsorbent particles, a model for uranium(VI) adsorption on amberlite IR-118H was used. The rate constants have been calculated for 293, 313 and 333 K using Lagergren equation and the activation energy (*E*a) was derived using the Arhenius equation. The thermodynamic quantities for the process of adsorption have been estimated by plotting Ln *K*D versus 1/*T*. The Δ*H*° and Δ*G*° values of uranium(VI) adsorption on amberlite IR-118H show endothermic heat of adsorption; higher temperatures favor the process.

Keywords: Adsorption, Kinetics, Thermodynamics, Uranium, Amberlite

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Full Text: [2003\App Rad Iso58, 713.pdf](2003/App%20Rad%20Iso58,%20713.pdf)

Abstract: The effects of various metal cations and pH on the adsorption of uranium(VI) on strongly acidic cation exchanger Amberlite IR-118H (AIR-118H) were studied. The metal cations suppress U(VI) adsorption differently depending on their ionic radii. Adsorption of U(VI) on AIR-118H peaks at pH 3.4, which was attributed to the occurrence of different forms of U(VI) at different pH values. The adsorption data were then processed using the Frumkin-Fowler-Guggenheim equation, and the standard free energy of adsorption was calculated. (C) 2003 Elsevier Science Ltd. All rights reserved.

Keywords: Adsorption, Amberlite, Cation Exchanger, Cation-Exchanger, Data, Distribution Coefficient, Frumkin Equation, Lanthanum(III), Montmorillonite, pH, Preconcentration, Resin, Science, Separation, Sorption Behavior, Thorium(IV), U(VI), Uranium, Uranium(VI), Uranyl

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Full Text: [2003\App Rad Iso59, 5.pdf](2003/App%20Rad%20Iso59,%205.pdf)

Abstract: Cesium adsorption on silica gel has been studied as a function of different particle sizes (15, 40 and 63 mum), cation concentrations and temperatures. The adsorption behavior of cesium was evaluated by using the radiotracer method. The temperatures chosen for the study were 25degreesC, 40degreesC, and 60degreesC. Cesium concentrations were ranged between I X 10(-6)-1 x 10(-3)M. The data were fitted. to both Freundlich and Dubinin-Radushkevich isoterms. The thermodynamic parameters calculated from the adsorption results were used to explain the mechanism of the adsorption. (C) 2003 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Adsorption Isoterms, Cesium, Cesium Adsorption, Data, Dubinin-Radushkevich, Freundlich, Mechanism, Radiotracer, Silica, Silica Gel, Sorption, Thermodynamic, Thermodynamic Parameters

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Full Text: [2004\App Rad Iso59, 255.pdf](2004/App%20Rad%20Iso59,%20255.pdf)

Abstract: We have characterized “MnO2 Resin,” a new resin developed by the PG Research Foundation, for radium adsorption over wide ranges of pH, reaction times and salt concentrations. We show that the sorption of Ba-133 (used as a proxy for Ra) is highly dependent on pH with the most useful range from pH 4 to 8. The surface layers of the Mn oxides apparently become more positively charged under acidic conditions (below pH 4), which prevents diffusion of positively charged alkaline earth species (e.g. Ba2+, Ra2+) into the sorption sites. Adsorption at higher pH is thought to be inhibited because of carbonate complexation. We found that the sorption characteristics for radium onto MnO2 Resin are especially favorable for low-salinity waters but the sorption is still very satisfactory for highly salted solutions (K-D = 2.8 x 10(4) in both cases) but with slower kinetics. For analytical purposes, both column and pump experiments showed high recoveries with no measurable discrimination between Ra and Ba regardless of flow rates in fresh water. Seawater tests showed that recoveries of Ra and Ba are lower than fresh water at elevated flow rates with Ra adsorption higher than Ba at flow rates above 10 ml/min. (C) 2003 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Coastal Waters, Complexation, Diffusion, Discharge, Drinking-Water, Kinetics, MnO2 Resin, Monitoring, Natural Waters, pH, Preconcentration, Ra-226, Radium, Radium Isotopes, Research, Resin, Sorption, Sorption Kinetics, Spectrometry, Water

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Full Text: [2004\App Rad Iso60, 1.pdf](2004/App%20Rad%20Iso60,%201.pdf)

Abstract: Rhizopus arrihizus (R. arrihizus), a fungus, which in previous experiments had shown encouraging ability to remove Am-241 from solutions, was immobilized by calcium alginate and other reagents. The various factors affecting Am-241 biosorption by the immobilized R. arrihizus were investigated. The results showed that not only can immobilized R. arrihizus adsorb Am-241 as efficiently as free R. arrihizus, but that also can be used repeatedly or continuously. The biosorption equilibrium was achieved within 2 h, and more than 94% of Am-241 was removed from Am-241 solutions of 1.08 MBq/l by immobilized R. arrihizu in the pH range 1-7. Temperature did not affect the adsorption on immobilized R. arrihizus in the range 15-45degreesC. After repeated adsorption for 8 times, the immobilized R. arrihizus still adsorbed more than 97% of Am-241. At this time, the total adsorption of Am-241 was more than 88.6 KBq/g, and had not yet reached saturation. Ninety-five percent of the adsorbed Am-241 was desorbed by saturated EDTA solution and 98% by 2 mol/l HNO3. (C) 2003 Elsevier Ltd. All rights reserved.

Keywords: Accumulation, Adsorption, Alginate, Am-241, Americium-241, Biomass, Biosorption, Biosorption, Calcium, Cells, EDTA, Equilibrium, Heavy-Metals, Hno3, Immobilization, Kinetics, pH, Recovery, Rhizopus Arrihizus, Temperature, Toluene, Uranium

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Full Text: [2004\App Rad Iso60, 621.pdf](2004/App%20Rad%20Iso60,%20621.pdf)

Abstract: The sorption and desorption behaviour of several radionuclides, including Am-241, Eu-152,Eu-154, U-233, Cs-137, Sr-90 and Y-90 was studied under varying acidities using zirconium vanadate as ion exchanger. The sorption follows the order: Cs > Eu > Am > Y > U, while Sr was not taken up by the ion exchanger. A radiochemical separation scheme for the Y-90 daughter from its Sr-90 parent using zirconium vanadate ion exchanger has been developed. The exchanger was synthesized and characterized in our laboratory. (C) 2003 Elsevier Ltd. All rights reserved.

Keywords: Am-241, Cesium, Desorption, Ion Exchange, Radionuclides, Separation, Sorption, Sr-90, Y-90, Zirconium Vanadate

? Wang, X.K., Chen, Y.X. and Wu, Y.C. (2004), Diffusion of Eu(III) in compacted bentonite - effect of pH, solution concentration and humic acid. *Applied Radiation and Isotopes*, **60** (6), 963-969.

Full Text: [2004\App Rad Iso60, 963.pdf](2004/App%20Rad%20Iso60,%20963.pdf)

Abstract: The effect of pH, Eu(III) solution concentration and humic acid on the diffusion of Eu(III) in compacted bentonite (rho(b) = 1000 +/- 30 kg/m(3)) was studied with “in-diffusion” method at an ionic strength of 0.1 M NaClO4. The results (K-d values from the first slice and theoretical calculation, apparent and effective diffusion coefficients) derived from the new capillary method are in good agreement with the literature data under similar conditions, and fit the Fick’s second law very well. The results suggest that the diffusion of Eu(III) is dependent on pH values and independent on solution concentration in our experimental conditions. Humic acid forms precipitation/complexation with Eu(III) at the surface of compacted bentonite and thus deduces the diffusion/transport of Eu(III) in compacted bentonite. The K-d values in compacted bentonite are in most cases lower than those in powdered bentonite obtained from batch experiments. The difference between the K-d values from powdered and compacted bentonite is a strong function of the bulk density of the bentonite. The results suggest that the content of interlaminary space plays a very important role to the diffusion, sorption and migration of Eu(III) in compacted bentonite. (C) 2004 Elsevier Ltd. All rights reserved.

Keywords: Alumina, Batch, Bentonite, Capillary, Data, Density, Diffusion, Eu, Eu(III), Europium, Fulvic-Acid, Humic Acid, Ionic Strength, K-D, Literature, Migration, Nuclear-Magnetic-Resonance, pH, Radioeuropium, Sodium Bentonite, Sorption, Sorption

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Full Text: [2004\App Rad Iso61, 1163.pdf](2004/App%20Rad%20Iso61,%201163.pdf)

Abstract: To provide an overall functional evaluation of buffer materials, this study attempted to investigate the relationships among the engineering properties, plastic index (PI), compaction efficiency, sorption properties, and distribution ratio (R-d) for some buffer materials composed of quartz sand and bentonite. Th and U were nuclides of interest, and both synthetic groundwater (GW) and seawater (SW) were used for batch sorption experiments, while the deionized water (DIW) was used for engineering property tests. SW and GW were also used to evaluate the effects on PI. The results show that the maximum dry density was reached when bentonite content was 30% with the same compaction energy by the ASTM D698 method. PI and bentonite content of tested buffer materials consisting of bentonite and quartz sand demonstrated a linearly proportional relationship regardless of the solution used. The following sequence of PIDIW > PIGW > PISW is due to coagulation and flocculation effects. The buffer materials of lower PI value could decrease swelling potential and increase permeability. The Rd observed in GW and SW of U increased linearly with PI measured in DIW, although the R-d of Th remained relatively constant above a PI of 88. From the viewpoints of associated engineering and sorption properties, the buffer materials containing 30-50% bentonite are probably the most favorable choice. Another result shows that U has a better additivity with respect to R-d than Th in both synthetic GW and synthetic SW. These results will allow a determination of more effective buffer material composition, and improved estimates of the overall R-d of the buffer material mixture from the R-d of each mineral component. (C) 2004 Elsevier Ltd. All rights reserved.

Keywords: Additivity, Batch, Bentonite, Buffer Material, Coagulation, Compacted Bentonite, Compaction Efficiency, Density, Determination, Evaluation, Flocculation, Plastic Index, Properties, Sand, Seawater, Sorption, Sorption Properties, Swelling, Waste-Disposal Vault, Water

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Full Text: [2004\App Rad Iso61, 1173.pdf](2004/App%20Rad%20Iso61,%201173.pdf)

Abstract: The objective of this work was to establish a new procedure for Ra-228 determination of natural waters via preconcentration of radium on MnO2 and separation of its daughter, Ac-228, using Diphonix ion exchange resin. Following removal of potential interferences via passage through an initial Diphonix Resin column, the first daughter of Ra-228, Ac-228, is isolated by chromatographic separation via a second Diphonix column. A holding time of > 30 h for Ac-228 ingrowth in between the two column separations ensures secular equilibrium. Barium-133 is used as a yield tracer. Actinium-228 is eluted from the second Diphonix Resin with 5 ml 1 M 1-Hydroxyethane-1,1-diphosphonic acid (HEDPA) and quantified by addition of scintillation cocktail and LSC counting. Radium (and Ba-133) from the load and rinse solutions from the 2nd Diphonix column may be prepared for alpha spectrometry (for determination of Ra-223, Ra-224, and Ra-226) by BaSO4 microprecipitation and filtration. Decontamination tests indicate that U, Th, and Ra series nuclides do not interfere with these measurements, although high contents of Sr-90 (Y-90) require additional treatment for accurate measurement of Ra-228. Addition of stable Sr as a “hold back” carrier during the initial MnO2 preconcentration step was shown to remove most Sr-90 interference. (C) 2004 Elsevier Ltd. All rights reserved.

Keywords: Actinides, Adsorption, Alpha Spectrometry, Coastal Mixing Rates, Decontamination, Determination, Diphonix Resin, Discharge, Equilibrium, Exchange, Extraction Chromatography, Extraction Chromatography, Groundwater, Indicators, Ion Exchange, Liquid Scintillation Counting, Lsc, Manganese, Natural Waters, Preconcentration, Radium, Radium Isotopes, Removal, Resin, Rivers, Separation, Sr-90, Treatment, Y-90

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Full Text: [2004\App Rad Iso61, 1413.pdf](2004/App%20Rad%20Iso61,%201413.pdf)

Abstract: The effects of pH and Sr2+ solution concentration on diffusion and sorption of Sr2+ in compacted bentonite (Pb = 1000 + 30 kg/m(3)) were studied using an “in-diffusion” method at an ionic strength of 0.1 M NaClO4. The results (distribution coefficients, K-d, apparent and effective diffusion coefficients, D-a and D-c) derived from the capillary method are in good agreement with the literature data obtained for similar bentonite dry densities and fit Fick’s second law very well. The results suggest that the diffusion of Sr2+ in compacted bentonite decreases slightly with increasing pH values and also increases slightly with increasing Sr2+ solution concentration. The distribution coefficients are weakly dependent on the solution concentrations and show a slight increase with increasing pH values. The average effective diffusion coefficient of Sr2+ in compacted bentonite is (1.2+/-0.2) x 10(-9) m(2)/s, surface diffusion effects are found for the diffusion of Sr2+ in compacted bentonite. (C) 2004 Elsevier Ltd. All rights reserved.

Keywords: Acid, Behavior, Bentonite, Capillary, Clay, Data, Diffusion, Diffusion Coefficient, Distribution Coefficients, Effect of Ph, Eu(III), Granite, Ionic Strength, K-D, Literature, Montmorillonite, Ni, Pb, pH, Radioeuropium, Radiostrontium, Sodium Bentonite, Sorption, Sorption Characteristics, Surface Diffusion

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Full Text: [2005\App Rad Iso62, 1.pdf](2005/App%20Rad%20Iso62,%201.pdf)

Abstract: The effect of different calcareous soil solid components on the sorption and desorption of radioselenium was investigated by using a selective extraction method. The distribution coefficients, the breakthrough curves and the displacement curves were experimentally determined by batch and column experiments. The experiments were carried out at pH 7.8 +/- 0.2, T = 20 +/- 1degrees C and in the presence of 0.001 M CaCl2. It is found that all sorption isotherms are linear, the sorption-desorption hysteresis for untreated and treated soils to remove organic matter, CaCO3 and organic matter plus CaCO3 is obvious; and the retention of radioselenium can probably be attributed to clay and oxides. The contributions of organic matter and CaCO3 to the sorption of radioselenium are significant, and the interaction effects among organic matter, CaCO3 and other components play an important role in the sorption of radioselenium in calcareous soil. The content of interlaminary space of compacted soil plays an important role in the sorption of radioselenium in compacted soil. The presence of CaCO3 retards the transport of radioselenium in soils, CaCO3 is an important trap of radioselenium. It is very difficult for the effluent concentration to reach the influent concentration, although radioselenium is very quickly detected in the effluent solution. The breakthrough curves (BTCs) can be simulated by a one-dimensional convection-dispersion transport model. (C) 2004 Elsevier Ltd. All rights reserved.

Keywords: Aqueous-Solutions, Batch, Behavior, Breakthrough, Breakthrough Curves, Calcareous Soil, Clay, Compacted Bentonite, Desorption, Diffusion, Distribution Coefficients, Effluent, Eu(III), Extraction, Hysteresis, Iron-Oxides, Isotherms, Migration, Model, Organic Matter, pH, Radionuclides, Radioselenium, Red Earth, Retention, Selenium, Soil, Soils, Sorption, Sorption Isotherms, Transport

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Full Text: [2005\App Rad Iso62, 91.pdf](2005/App%20Rad%20Iso62,%2091.pdf)

Abstract: Sorption is an important process for the transport of radionuclides through backfill materials in a radioactive waste underground repository. Within this study, sorption of Cs on selected Czech clay materials and their mixtures with sand was investigated by batch tests. The experiments were performed under oxic conditions at 25degreesC. Synthetic groundwater as a liquid phase and unconditioned clays (as they were provided by their producer) were used to reach the natural conditions as close as possible. Distribution ratios (Rds) of Cs for all selected clays rise with increase of the clay fraction in clay/sand mixtures in agreement with previous works studying sorption behaviour of such mixtures. The rise of Rds is from 10(2) cm(3) g(-1) for mixtures with 80% of sand to 10(3) cm(3) g(-1) for pure clays. There are significant differences between natural and technologically modified clays. (C) 2004 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Backfill Materials, Batch, Batch Method, Batch Tests, Behavior, Bentonite, Cesium, Charge, Clay, Clays, Cs, Diffusion, Distribution, Distribution Ratios, Fixation, Illite, Minerals, Modified Clays, Montmorillonite, Process, Radioactive, Radioactive Waste, Radionuclides, Sand, Sorption, Transport

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Full Text: [2005\App Rad Iso62 395.pdf](2005/App%20Rad%20Iso62%20395.pdf)

Abstract: The present study was undertaken to extend our knowledge of the behaviour of At-211 in the laboratory environment. An unexpectedly high volatility of free At-211 was found, up to 85% during an hour. Free At-211 also adsorbed more onto the plastic material studied than I-125(-). The results of this study show that it is of great importance to pay careful attention to radiation protection procedures during the practical handling of free At-211. (C) 2004 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Antibodies, Astatine, Astatine, At-211, Cancer-Cell-Lines, Environment, Irradiation, Radiation Protection, Radiotherapy, Retention, Sodium, Iodide Symporter, Transport, Volatility

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Full Text: [2005\App Rad Iso63, 293.pdf](2005/App%20Rad%20Iso63,%20293.pdf)

Abstract: Two inorganic ion exchangers, zirconium vanadate and ceric vanadate were synthesized and applied to confine and separate Eu-152 and Cs-134 from a synthetic mixture. The percentages of adsorption of the two radionuclides were studied for the two ion exchangers at varying pH conditions. At pH 3, zirconium vanadate adsorbs both Eu and Cs and a column chromatographic separation was achieved using 0.1 M EDTA as the eluant. The ceric vanadate ion exchanger showed an increased trend in adsorption for both the radionuclides with increase of pH value from I to 6. At pH 1, a column chromatographic separation of these radionuclides from a mixture was achieved, because at this pH only Cs-134 was adsorbed to ceric vanadate bed in the column. (c) 2005 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Ceric Vanadate, Cesium, Cs-134, EDTA, Eu-152, Inorganic Ion Exchanger, pH, Radionuclides, Separation, Trend, Zirconium Vanadate

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Full Text: [2006\App Rad Iso64, 291.pdf](2006/App%20Rad%20Iso64,%20291.pdf)

Abstract: The adsorption of radioactive cobalt from aqueous solution on MgO, MnO2, TiO2, SnO, activated carbon and calcined hydrotalcite was studied under static conditions as a function of pH (1, 3, 5, 7, and 10) of the Co-60 solution. It was found that under the experimental conditions, Co-60 was significantly adsorbed on MnO2, TiO2 and activated carbon and in smaller quantities on MgO, SnO and calcined hydrotalcite. The adsorption of Co-60 species on MgO, MnO2, TiO2 and SnO can be attributed to the direct exchange of ions with a specific group on the adsorbing surface, in accordance with the concept of zero point charge (zpc). The radionuclide content was determined by gamma-spectrometry. The Co-60 chemical species present in aqueous solutions with different pH values were surveyed by using high-voltage electrophoresis. It was also found that Co-60 was present only as a cationic species at pH 1, 3, 5 and 7 and a neutral species at alkaline pH. (c) 2005 Elsevier Ltd. All rights reserved.

Keywords: Activated Carbon, Adsorption, Anion-Exchange, Aqueous Solutions, Calcined Hydrotalcite, Carbon, Cationic, Cationic Species, Co-60, Cobalt, Exchange, Fission-Products, Hydrotalcite, Hydrotalcite-Like Compounds, Hydrous Oxides, Inorganic Materials, Ion-Exchangers, Manganese-Dioxide, MgO, Oxide, pH, Physicochemical Properties, Radioactive, Radionuclide, Radionuclides, Removal, Sorption, Speciation, TiO2

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Full Text: [2006\App Rad Iso64, 368.pdf](2006/App%20Rad%20Iso64,%20368.pdf)

Abstract: An alternative sample preparation method for the determination of gross-alpha/beta activity concentrations in drinking water is introduced in this paper. After the freeze-drying of tap water samples, determination by liquid scintillation counting can be applied utilizing alpha/beta separation. It has been shown that there is no adsorption or loss of solid radionuclides during the freeze-drying procedure. However, the samples have to be measured quickly after the preparation since the ingrowth of daughter isotopes negatively effects the measurement. The limits of detection for gross-alpha and gross-beta activity are in the range 25-210 mBq/l, respectively, for a measurement time of only 8-9 h. (c) 2005 Elsevier Ltd. All rights reserved.

Keywords: Activity, Adsorption, Determination, Drinking Water, Freeze-Drying, Liquid Scintillation Counting, LSC, Preparation, Radionuclides, Screening, Separation, Water, Water Samples

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Full Text: [2006\App Rad Iso64, 455.pdf](2006/App%20Rad%20Iso64,%20455.pdf)

Abstract: Humic substances and bentonite have attracted great interest in radioactive waste management. Here the sorption of cobalt on bentonite in the presence and absence of fulvic acid (FA) under ambient conditions was studied. The effects of pH, ionic strength, FA and solution concentrations on cobalt sorption to bentonite were also investigated using batch techniques. The results indicate that the sorption of cobalt is strongly dependent on pH and is independent of ionic strength under our experimental conditions. Surface complexation is considered the main mechanism of cobalt sorption to bentonite. In the presence of FA, little effect of FA on cobalt sorption was found at pH < 6; a positive effect of FA on cobalt sorption was found for pH 6-8; and a negative effect of FA on cobalt sorption was found at pH > 8. The addition sequences of FA/Co2+ to the bentonite suspension on the sorption of cobalt to FA-coated bentonite were also studied. The results indicated that the sorption is not influenced by the addition sequences. Some possible mechanisms are discussed. (c) 2005 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Alumina, Aqueous-Solution, Batch, Bentonite, Cobalt, Compacted Bentonite, Complexation, Desorption, Effect of pH Fa, Fluorescence Spectroscopy, Fulvic Acid, Humic Substances, Humic-Acid, Ionic Strength, Mechanism, Mechanisms, Montmorillonite, Natural Organic-Matter, pH, Radioactive, Radioactive Waste, Sorption, Surface Complexation, Waste Management

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Full Text: [2006\App Rad Iso64, 414.pdf](2006/App%20Rad%20Iso64,%20414.pdf)

Abstract: The effects of pH (pH = 2-12), ionic strength (0.01-2 mol/l NaNO3) and humic acid on the sorption and complexation of Eu(III) on alumina were investigated by using batch techniques. The experiments were carried out at room temperature and under ambient conditions. The results indicate that the sorption of Eu(III) on alumina is strongly influenced by humic acid. The sorption of Eu(III) on alumina is significantly dependent on pH values and independent of ionic strength. The sorption of Eu(III) on alumina may be attributed to surface complexation. The species of Eu(III) on HA-alumina colloids is dominated by both HA and alumina, and the addition sequences of HA or Eu(III) to the ternary system do not influence the sorption of Eu(III) to HA-coated alumina. Kinetic dissociation of Eu(III) from bare and HA-coated alumina was also studied by using the chelating resin. The result was discussed by a pseudo-first-order kinetics model. (c) 2005 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Alumina, Batch, Bentonite, Cation-Exchange, Chelating Resin, Colloids, Complexation, Desorption, Eu(III), Fluorescence Spectroscopy, Fulvic-Acid, Ha, Humic Acid, Ionic Strength, Kinetic, Kinetics, Kinetics Model, Mechanisms, Model, Multitracer, Na-Montmorillonite, pH, Radioeuropium, Resin, Sorption, System, Temperature

? Başçetin, E. and Atun, G. (2006), Adsorption behavior of strontium on binary mineral mixtures of Montmorillonite and Kaolinite. *Applied Radiation and Isotopes*, **64** (8), 957-964.

Full Text: [2006\App Rad Iso64, 957.pdf](2006/App%20Rad%20Iso64,%20957.pdf)

Abstract: The adsorption behavior of kaolinite and montmorillonite minerals and their mixtures in respect of Sr ion were studied by means of a batch method using Sr-90 as a radio tracer. The effect of several parameters such as temperature, pH, Sr concentration and supporting electrolyte were investigated. Experimentally measured distribution coefficients showed a good agreement to within 98.5-99.7% with theoretically calculated values. The values of adsorption capacity of adsorbents and mean adsorption energy of adsorption were calculated by fitting the adsorption data to Dubinin-Radushkevich isotherm. The adsorption capacity of clay mixtures decreased as kaolinite fractions increased. The mean adsorption energy values of 8.0-9.5 kJ mol(-1) showed that adsorption was governed by ion exchange. The Freundlich parameters were used to characterize a site distribution function for binary exchange between Sr and Na. (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Adsorbents, Adsorption, Adsorption Capacity, Batch, Batch Method, Bentonite, Capacity, Clay, Clay-Minerals, Data, Distribution Coefficient, Distribution Coefficients, Dubinin-Radushkevich, Dubinin-Radushkevich Isotherm, Exchange, Freundlich, Freundlich Parameters, Illite, Ion Exchange, Ionic Strengths, Isotherm, Kaolinite, Minerals, Montmorillonite, pH, Retention, Salt Concentration, Silica, Site Distribution Function, Sorption, Sr-85, Sr-90, Strontium, Strontium Adsorption, Supporting Electrolyte, Temperature

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Full Text: [2006\App Rad Iso64, 1265.pdf](2006/App%20Rad%20Iso64,%201265.pdf)

Abstract: Optimal thermodynamic stability conditions must prevail when radioactivity standard solutions are prepared. These conditions are studied, they relate to: The nature of the radioactive ion, which makes it possible to establish the pH of the solubilization medium at a given concentration, The carrier concentration, which is determined by considering the radionuclide production method and the prior concentration in the original solution from the supplier, The most stable oxidation state of the radioactive ion and of the carrier ion, which must be considered at the pH established by the solubilization medium. A procedure for all the glassware used in preparation has been implemented. (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Competitive Adsorption, Glass Ampoules, Minerals, Oxidation, pH, Phosphate, Preparation, Production, Radioactive, Radioactivity, Radionuclide, Radionuclides, Si, Solution Interface, Source Preparation, Stability, Standard Solutions, Standard Sources, Thermodynamic, Thermodynamic Stability

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Full Text: [2006\App Rad Iso64, 1538.pdf](2006/App%20Rad%20Iso64,%201538.pdf)

Abstract: The uncertainties associated with the batch method used often as adsorption data source for performance assessments of radioactive waste repositories have been analyzed and evaluated. The adsorption of cesium on four different bentonites (two Na- and two Ca-bentonites) using a radiotracer (Cs-137) technique has been studied to evaluate experimental uncertainties and compare their effects on calculated distribution coefficients (K(d)s). Three main factors influencing uncertainty of K-d at given conditions were identified-the radiotracer operation (mainly tracer addition to experimental systems), the phase separations efficiency and the mineralogical heterogeneity of samples. It was found that the determination of quantitative contributions of the last two factors to the uncertainty of K-d is difficult, depending on input material and conditions. The centrifugation and ultrafiltration method has been tested for removing colloids in sample solutions, but the results obtained were disputable. The mineral heterogeneity (complex mineral composition) effect has been identified mainly in kinetics of cesium adsorption where three different trends were described. This has important influence on the time-scale of the experiment’s planning and equilibrium time estimation or identification. It has been concluded that experimental procedure may represent important uncertainty source of calculated K-d. In performance assessment studies, this uncertainty of K-d given by the appropriate experimental procedure should be taken into account and properly evaluated. (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Base-Line, Batch, Batch Method, Batch Technique, Cesium, Clays, Colloids, Complex, Data, Determination, Distribution Coefficients, Elements, Equilibrium, Illite, Ion, K-D, Kinetics, Minerals, Performance, Radioactive, Radioactive Waste, Radiotracer, Smectite-Rich Clays, Society Source Clays, Sorption, Trends, Ultrafiltration, Uncertainties

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Full Text: [2007\App Rad Iso65, 155.pdf](2007/App%20Rad%20Iso65,%20155.pdf)

Abstract: The removal behavior of thorium (Th(IV)) has been investigated in multicomponent systems containing silica (SiO2) as the model of inorganic particles because of its widespread presence in the earth’s crust and soil humic, acid (HA)/fulvic acid (FA) by batch experiments. The influence of pH from 2 to 12, ionic strength from 0.02 to 0.2 M KNO3, soil HA/FA concentration from 8.3 to 22.5mg/L, and foreign cations (Li+, Na+, K+) and anions (NO-, Cl-) on the sorption of Th(IV) onto SiO2 was also tested. The sorption isotherms 3 of Th(IV) at approximately constant pH (3.50 +/- 0.02) were determined and analyzed regressively with three kinds of sorption isotherm models, i.e., linear, Langmuir, and Freundlich models. The results demonstrated that the sorption of Th(IV) onto SiO, increased steeply with increasing pH from 2 to 4. Generally, humic substances (HSs) were shown to enhance Th(IV) sorption at low pH, but to reduce Th(IV) sorption at intermediate and high pH. It was a hypothesis that the significantly positive influence of HA/FA at pH from 2 to 4 on the sorption of Th(IV) onto SiO, was attributed to strong surface binding of HA/FA on SiO2 and subsequently the formation of ternary surface complexes such as equivalent to MO-O-HA-Th or equivalent to MO-O-FA-Th. The results also demonstrated that the sorption was strongly dependent on the concentration of HA/FA, and independent of ionic strength and foreign ions under our experimental conditions. (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Amorphous Silica, Batch, Contact Time, Fa, Freundlich, Fulvic Acid, Fulvic-Acids, Humic Acid, Humic Substances, Hydrolyzable Metal-Ions, Ionic Strength, Isotherm, Isotherm Models, Isotherms, Langmuir, Mass-Spectrometry, Model, Model Systems, Models, Natural Organic-Matter, No, Oxide-Water Interface, pH, Removal, Silica, Soil, Sorption, Sorption Isotherm, Sorption Isotherms, Th(IV), Thorium

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Full Text: [2007\App Rad Iso65, 280.pdf](2007/App%20Rad%20Iso65,%20280.pdf)

Abstract: Removal behaviour of rice hulls was assessed for the removal of Cs-134 from aqueous solutions. Results obtained from batch-type experiments revealed that relatively low uptake of Cs(I) was favoured with increasing the sorptive concentration (from 1 x 10(-8) to 1 X 10(-2) mol L-1), temperature (298-328), and pH (2.40-10.20). The concentration dependence data fitted well for Freundlich adsorption isotherm. Thermodynamic parameters revealed that the uptake process was endothermic and proceeded via ‘ion exchange’ along with ‘surface complexation’. Moreover, the adsorbed species were not to be desorbed into the bulk concentration even at elevated temperatures, i.e., up to 328 K hence forming a stable adsorption phase. Further, the radiation stability of the rice hulls samples was also assessed by exposing it towards 300 mCi neutron source having the neutron flux of ca. 3.85 x 10(6) n cm(-2) s(-1) associated with nominal gamma-dose of ca. 1.72 Gy h(-1) and indeed it was observed that the rice hulls samples were found to be stable at least for the removal of Cs-134. (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Adsorption Isotherm, Aqueous Solutions, Biomass, Cesium, Chromium, Complexation, Cr3+, Cs-134, Data, Exchange, Freundlich, Freundlich Adsorption, Freundlich Isotherm, Hg2+, Husk, Ion Exchange, Ions, Isotherm, Metal, pH, Process, Radiation Stability, Radiotracer, Removal, Rice, Rice Hulls, Sorption, Stability, Temperature, Thermodynamic, Thermodynamic Parameters, Uptake

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Full Text: [2007\App Rad Iso65, 375.pdf](2007/App%20Rad%20Iso65,%20375.pdf)

Abstract: Thorium is considered as a chemical analog of other tetravalent actinides. Herein, the sorption of Th(IV) on TiO2 in the presence or absence of soil fulvic acid (FA)/humic acid (HA) as a function of pH, ionic strength and FA/HA concentration has been studied by a batch method. The morphology was characterized by scanning electron microscopy (SEM). The results indicate that sorption of Th(IV) on TiO2 increases from 0% to similar to 94% at pH 1 similar to 4, and then maintains level with increasing pH values. Both FA and HA have a positive effect on Th(IV) sorption at low pH values and the contribution of FA on Th(IV) sorption is rather higher than that of HA at pH < 4. The sorption is weakly dependent on the concentration of KNO3 in solution, but the cations K+, Na+ and Li+ influence Th(IV) sorption more obviously. The batch results indicate that the inner sphere complex formation is formed at bare surfaces or FA/HA-bound TiO2 particle surfaces. Results of SEM analysis show that the particle sizes of TiO2, Th TiO2 and Th-HA-TiO2 colloids are quite different. Surface complexation may be considered as the main sorption mechanism. (c) 2006 Elsevier Ltd. All rights reserved.

Keywords: Acids, Adsorption, Alumina, Analysis, Batch, Batch Method, Behavior, Chelating Resin, Colloids, Complex, Complexation, Contact Time, Contribution, Desorption, Dilute Aqueous-Solutions, Fa, Fluorescence Spectroscopy, Fulvic Acid, Fulvic Acids, Ha, Humic Acid, Ionic Strength, Mechanism, Montmorillonite, Morphology, Nanoparticles, pH, pH Dependence, SEM, Soil, Sorption, Sorption Mechanism, Surface Complexation, Surfaces, Th(IV), Thorium, Thorium(IV), TIO2

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Full Text: [2007\App Rad Iso65, 482.pdf](2007/App%20Rad%20Iso65,%20482.pdf)

Abstract: Ion-exchange adsorbers are widely used for radioisotope separation, as well as for the removal of hazardous fission products from aqueous waste prior to discharge to the environment. Inorganic exchangers are of particular interest because of their resistance to radiolytic damage and selectivity for specific fission products. Composite inorganic-organic adsorbers represent a group of inorganic ion exchangers modified by using binding organic material, polyacrylonitrile, for preparation of larger size particles with higher granular strength. At the same time, kinetics of ion exchange and sorption capacity of such composite adsorbers are not influenced by the binding polymer. The contents of active component in composite adsorber were varied over a very broad range of 5-95% of the dry weight of the composite adsorber, and tested for separation and concentration of various stimulated wastes. Three different inorganic sorbents, granular hexacyanoferrate-based ion exchanger, were developed for the removal of Cs and Co ions from waste solutions containing different complexing agents as detergents. Radiation and thermal stability studies show that these adsorbents can be used for medium-active waste treatment. (c) 2007 Elsevier Ltd. All rights reserved.

Keywords: Active, Adsorbents, Capacity, Cesium, Cobalt, Composite, Composite Sorbents, Environment, Exchange, Hexacyanoferrate(II)S, Hexacyanoferrates, Inorganic-Ion-Exchangers, Insoluble Ferrocyanides, Ion Exchange, Kinetics, Polyacrylonitrile Binder, Polymer, Preparation, Radioactive, Radioisotope Separation, Removal, Selectivity, Separation, Sorption, Sorption Capacity, Sorption Properties, Stability, Thermal Stability, Treatment, Weight

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Full Text: [2007\App Rad Iso65, 901.pdf](2007/App%20Rad%20Iso65,%20901.pdf)

Abstract: The equilibrium and kinetic properties of Am(III), Eu(III) and Cs(I) ions adsorption by three weathered coals (WCs) from China, have been investigated in batch stirred-tank experiments. The effects of contact time, solution acidity and initial sorbate concentration on the adsorption of Am(III), Eu(III) and Cs(I) by Yuxian(YX) Tongchuan (TC) and Pingxiang (PX) WC were evaluated. The radionuclide ions are able to form complex compounds with carboxylic and phenolic groups of WCs and they are also bounded with phenolic groups even at high acidity reaction solution (> 0.1 mol/L). Mechanisms including ion exchange, complexation and adsorption to the coal surface are possible in the sorption process. The acidity of the solution played an important role in the adsorption. Even acidity as high as 0.1 mol/L, 60% of Am(III) or Eu(III), 40% of Cs(I) were found to be sorbed on the YX WC, which had the best adsorption capacity for Am(III) and Eu(III). Our batch adsorption studies showed the equilibrium adsorption data fit the linear Langmuir and Freundlich adsorption isotherm. The maximum equilibrium uptake of Eu(III) were 0.412, 3.701, 5.446 mmol/g for JXWC, TCWC and YXWC, respectively. (c) 2007 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Adsorption Capacity, Adsorption Isotherm, Americium, Batch, Capacity, Cd(II), Cesium, Cesium Removal, China, Complex, Complexation, Compounds, Contact Time, Data, Equilibrium, Eu(III), Europium, Exchange, Freundlich, Freundlich Adsorption, Hanford Tank Waste, Ion, Ion Exchange, Isotherm, Kinetic, Langmuir, Process, Properties, Radionuclide, Radionuclides, Selective Removal, Sorbents, Sorption, Strontium, Uptake, Water, Weathered Coals

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Full Text: [2007\App Rad Iso65, 1108.pdf](2007/App%20Rad%20Iso65,%201108.pdf)

Abstract: The sorption of Th(IV) on attapulgite was studied as a function of pFL ionic strength, temperature, attapulgite contents and Th(IV) concentrations under ambient conditions using a batch technique. The results indicated that sorption of Th(IV) on attapulgite was strongly affected by pH values, and weakly dependent on ionic strength. Sorption of Th(IV) was dominated by surface complexation, although ion exchange also contributed to this sorption. Sorption of Th(IV) increased with increasing temperature of the system. Enthalpy (Delta H-0), entropy (Delta S-0) and Gibbs free energy (Delta G(0)) were calculated from the temperature-dependent sorption data; the results indicated that the sorption of Th(IV) on attapulgite was a spontaneous process. Sorption-desorption hysteresis indicated that the sorption of Th(IV) was irreversible, and that the Th(VI) adsorbed on attapulgite was difficult to be desorbed from solid to liquid phases. (c) 2007 Elsevier Ltd. All rights reserved.

keywords: Adsorption, Attapulgite, Batch, Batch Technique, Capillary Method, Carbon Nanotubes, Compacted Bentonite, Complexation, Data, Diffusion, Enthalpy, Exchange, Fulvic-Acid, Humic-Acid, Hysteresis, Ion Exchange, Ionic Strength, Mx-80 Bentonite, Palygorskite, pH, Process, Sepiolite, Sorption, Sorption-Desorption, System, Temperature, Th(IV)

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Full Text: [2008\App Rad Iso66, 1.pdf](2008/App%20Rad%20Iso66,%201.pdf)

Abstract: Chemical fingerprint techniques are frequently applied to airborne volcanic eruption products, so-called tephra, such as ash and pumice for archeological and geoscientific purposes. However, in some cases, a meaningful interpretation of the results is complicated by superficial contaminations. Therefore, this situation was simulated by the use of powdered rhyolitic pumice to investigate its capability to adsorb several ions from aqueous solutions. Using neutron activation analysis, adsorption could be proven for Cr3+, Cr2O72+ (dichromate), Fe3+, Co2+ , HAsO42- (hydrogen arsenate), Rb+, Sr2+, Ba2+, La3+, Ce3+, Ce4+, Sm3+, Th4+ and UO22+, which is a clear evidence for the interaction of those ions with the volcanic glass. In our experiments, pumice powder showed the ability to adsorb ions in the range from 1.8 mg kg(-1) (in case of HAsO42-) to 5.8 wt% (in case of Fe3+). Adsorption is probably due to ion-exchange reactions. It could also be shown that a few ions are not adsorbed in detectable quantities: Na+, K+, Fe2+, Zn2+ and Nd3+. The knowledge about adsorption of ions enables us not only to examine the possible influence of contaminations where chemical fingerprinting methods are applied to volcanic material for archaeometry, but it also suggests the technical application of pumiceous materials for technical purposes, like water purification or as an adsorbent in the filial storage of nuclear waste. In another series of INAA supported experiments, the influence of chemicals like ascorbic acid, acetic acid, HCl, HF, HNO3, H2O, H2O2, H3PO4, H2SO4, NaOH and NH3 on the bulk composition of pumice powder was investigated-resulting in no detectable change. We conclude that superficially contaminated tephra can be washed in diluted HF to remove contaminations without influencing the chemical fingerprint. (C) 2007 Elsevier Ltd. All rights reserved.

Keywords: Acetic Acid, Activation, Adsorbent, Adsorption, Analysis, Aqueous Solutions, Archaeometry, Arsenate, Ascorbic Acid, Chemical Fingerprint, Contamination, Fe3+, Glass, Greece, H2O2, H2SO4, H3PO4, HNO3, Hydrogen, Icp-Ms, Inaa, Ion Exchange, Lake-Sediments, Minoan Eruption, Neutron-Activation Analysis, Nh3, Nuclear Waste, Pumice, Pumice Powder, Purification, Santorini, Silica, Southwest Turkey, Storage, Tephra, Tephra, UO22+, Volcanic Rock, Water, Water Purification, Zn2+

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Full Text: [2008\App Rad Iso66, 14.pdf](2008/App%20Rad%20Iso66,%2014.pdf)

Abstract: The adsorption of selenium species on crushed granite is investigated directly linking to its internal iron-related minerals. Experimental results demonstrated that granite has higher affinity toward Se(IV) adsorption than Se(VI) adsorption. Se(IV) adsorption on granite is insensitive to background electrolytes while the effect of ionic strength on Se(VI) adsorption is not observed, which is attributed to the overloading of Se(VI) ions. Results of chemical sequential extraction showed that the removal of crystalline iron oxides dramatically reduces Se(IV) adsorption, which corresponds to the disappearance of goethite signal within XRD pattern. Based on our results, it is proposed that goethite within granite dominates Se adsorption in crushed granite. Although these goethites probably stem from some sample preparation processes including drilling in situ, crushing, washing and drying granite samples in laboratory, the formation of goethite enhances the granite affinity toward Se species adsorption. Images of SEM/EDS furthermore revealed that goethite is embedded within the fractures. In addition, quantification by standard addition method by spiking goethite suspension indicates that only around 20% of goethite minerals are available during Se(IV) adsorption. (C) 2007 Elsevier Ltd. All rights reserved.

Keywords: Absorption, Adsorption, Chemical Sequential Extraction, Desorption, Extraction, Fe Oxides, Ferric-Oxide, Goethite, Granite, Ionic Strength, Iron, Kinetics, Linkage, Mechanisms, Minerals, Preparation, Processes, Removal, Selenate Adsorption, Selenium Speciation, Selenium Species, Sequential Extraction, Sorption, Water, XRD

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Full Text: [2008\App Rad Iso66, 95.pdf](2008/App%20Rad%20Iso66,%2095.pdf)

Abstract: The adsorption of Am-241 and Ra-226 from natural water by a granulated wood charcoal was investigated as a function of the solution pH, in the range 4-10, and of the water flow, in the range 3.5-42 cm(3)/min. The percentage adsorption of Am-241 (fairly constant at >80% for all pHs) was greater than that of Ra-226 (which increased with increasing pH from similar to 40% up to >80%). The results are explained by considering the different species of each radionuclide present at the pH values of the solution at the end of the adsorbent column, and the pH of the point of zero charge of the adsorbent. At pH 6, the elimination of Am-241 from natural water was independent of the water flow, while the elimination of 226 Ra declined linearly as the flow rate was increased. (C) 2007 Elsevier Ltd. All rights reserved.

Keywords: Activated Carbons, Adsorbent, Adsorbents, Adsorption, 241Am, Americium, Aqueous-Solutions, Caceres Spain, Charcoal, Humic-Acid, Ionic-Strength, pH, Radionuclide, Radium, Removal, Sorption, Technetium, Water, Wood, Wood Charcoal

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Full Text: [2008\App Rad Iso66, 126.pdf](2008/App%20Rad%20Iso66,%20126.pdf)

Abstract: The pattern of radiostrontium and radiocesium sorption-desorption was examined in 30 Spanish soils by the quantification of the distribution coefficients (K-d) with batch tests, the evaluation of sorption reversibility with a single extraction, the estimation of sorption dynamics by the application of drying-wetting cycles, and the calculation of K-d(adjusted) values as an input for risk assessment models. The data obtained overlapped with those found in soils from other climatic areas, suggesting identical interaction mechanisms and allowing the extrapolation of parameterisations and prediction models among different scenarios. (C) 2007 Elsevier Ltd. All rights reserved.

Keywords: Aging, Agricultural Soils, Batch, Batch Tests, Chernobyl, 137Cs, Cycles, Data, Desorption, Distribution Coefficients, Distribution Coefficients, Dynamics, Evaluation, Extraction, K-D, Mechanisms, Models, Organic-Matter, Plant Transfer, Prediction, Radiocesium, Radiocesium, Radiocesium Interception Potential, Radionuclide, Radiostrontium, Risk Assessment, Single Extraction, Soils, Solid, Liquid Distribution, Sorption, Spain, Sr-90

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Full Text: [2008\App Rad Iso66, 288.pdf](2008/App%20Rad%20Iso66,%20288.pdf)

Abstract: Humic substances and clay minerals have been studied extensively in radioactive waste management. In our research, the sorption and desorption of radiocobalt on montmorillonite in the presence and absence of fulvic acid as a function of pH and ionic strength were investigated under ambient conditions by using batch techniques. The results indicate that the sorption of cobalt is strongly dependent on pH values and independent of ionic strength. Surface complexation rather than cation exchange is considered as the main mechanism of cobalt sorption to montmorillonite. The presence of fulvic acid enhances cobalt sorption obviously at pH values < 8. The desorption behavior changes of surface-sorbed cobalt from montmorillonite were studied by decreasing pH values and the solution cobalt concentrations independently. The results indicated that the sorption of cobalt on montmorillonite is irreversible. (c) 2007 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Aqueous-Solution, Batch, Capillary Method, Carbon Nanotubes, Cation Exchange, Chelating Resin, Clay, Clay Minerals, Cobalt, Compacted Bentonite, Complexation, Desorption, Diffusion, Exchange, Fluorescence Spectroscopy, Fulvic Acid, Humic Substances, Humic-Acid, Ionic Strength, Mechanism, Minerals, Montmorillonite, Mx-80 Bentonite, pH, Radioactive, Radioactive Waste, Radiocobalt, Research, Sorption, Surface Complexation, Waste Management

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Full Text: [2008\App Rad Iso66, 1183.pdf](2008/App%20Rad%20Iso66,%201183.pdf)

Abstract: In this work we used an “in-diffusion” method to study the effects of pH, solution concentration and packing density on Cs diffusion by packing local Taiwan laterite (LTL) into modified capillary columns with 5 mm diameter. These packed columns were first pre-equilibrated with synthetic groundwater (GW) for 3 weeks. The diffusion experiments were then carried out at ambient condition for 2 weeks. Our experimental results showed that the Cs diffusion profile fits Fick’s second law very well in given experimental conditions, indicating the validity of modified capillary column method. Generally speaking, Cs diffusion in LTL decreases as the pH increases and as Cs concentration decreases. The apparent diffusion coefficient (D-a) increases from 5.52×10-12 (10-7 M) to 2.18×10-11 (10-3 M) m2/s, while the effective diffusion coefficient (D-e) shows slight variation as the Cs concentration changes. Both the derived D-a and D-e values decrease as the pH increases, implying that the diffusion mechanisms of Cs nuclide in alkaline and acid environment are different. In addition, our results show that Cs diffusion is unaffected by the given packing density, indicating the interlaminary space is not the major determinant of Cs adsorption and diffusion in LTL. (C) 2008 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Capillary Column, Capillary Method, Cesium, Compacted Bentonite, Dependent Diffusion, Diffusion, Diffusion Coefficient, Eu(III), Groundwater, Hanford Site, Kaolinite, Laterite, Modified, Radionuclide, Radionuclides, Safety Assessment, Sorption, Subsurface Sediments, Transport

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Full Text: [2008\App Rad Iso66, 1313.pdf](2008/App%20Rad%20Iso66,%201313.pdf)

Abstract: Diatomite has a number of unique physicochemical properties and has diversified industrial uses. Natural diatomite has been tested as a potential sorbent for the removal of Th(IV) from aqueous Solutions. The results indicate that sorption of Th(IV) is strongly dependent on ionic strength at pH < 3, and is independent of ionic strength at pH > 3. Outer-sphere complexation or ion exchange may be the main sorption mechanism of Th(IV) to diatomite at low pH values, whereas the sorption of Th(IV) at pH > 3 is mainly dominated by innersphere complexation or precipitation. The competition for Th(IV) between aqueous or surface adsorbed anions (e.g., herein ClO4-, NOT and Cl-) and surface functional groups of diatomite is important for Th(IV) sorption. The thermodynamic data (ΔH°, ΔS°, ΔG°) a re calculated from the temperature-dependent sorption isotherms. The results suggest that sorption process of Th(IV) on diatomite is spontaneous and endothermic. (c) 2008 Elsevier Ltd. All rights reserved.

Keywords: Diatomite, Th(IV), Sorption, Thermodynamic Data, Humic/Fulvic Acid, Waste-Water, Thorium(IV), Adsorption, Removal, Nanoparticles, Remediation

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Full Text: [2009\App Rad Iso67, 1.pdf](2009/App%20Rad%20Iso67,%201.pdf)

Abstract: Sorption of Th(IV) on attapulgite was studied as a function of pH and temperature under ambient conditions using batch technique. The results indicated that sorption of Th(IV) on attapulgite was strongly affected by pH values and temperature. The kinetic sorption of Th(IV) can be described by pseudo-second-order rate very well. Sorption isotherms of Th(IV) at 293.15, 308.15 and 323.15 K were modeled by Langmuir and Dubinin-Radushkevich models very well, and the parameters indicated that the sorption of Th(IV) on attapulgite was strongly dependent on temperature and the sorption of Th(IV) increased with increasing temperature of the system. Enthalpy (ΔH°), entropy (ΔS°) and Gibbs free energy (ΔG°) were calculated from the temperature dependent sorption data, and the results indicated that the sorption of Th(IV) on attapulgite was a spontaneous process, and the sorption was endothermic. (C) 2008 Elsevier Ltd. All rights reserved.

Keywords: Sorption, Attapulgite, Th(IV), pH, Thermodynamic Data, Surfactant-Modified Montmorillonite, Multiwall Carbon Nanotubes, Aqueous-Solution, Ionic-Strength, Chelating Resin, Compacted Bentonite, Kinetic Desorption, Capillary Method, MX-80 Bentonite, Na-Rectorite

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Full Text: [2009\App Rad Iso67, 996.pdf](2009/App%20Rad%20Iso67,%20996.pdf)

Abstract: U(VI) sorption on goethite was investigated as functions of pH, solid-to-liquid ratio (m/V), ionic strength and U(VI) concentration by a batch experimental method. Effects of phosphate, carbonate and fulvic acid (FA) on U(VI) sorption were examined. It was found that the sorption of U(VI) increases from 0% to 100% over the pH range of 2.5-4.5 and keeps constant in the high pH range. The sorption of U(VI) on goethite is insensitive to ionic strength. Different surface complexes in the framework of double-layer model were examined for fitting the sorption of U(VI) on goethite. A model with two mononuclear inner-sphere surface complexes, SOUO2+ and SOUO2OH, was found capable of reproducing the pH sorption edges, the sorption isotherms and the sorption data with variable m/V in this study. The proposed model can also interpret the pH sorption edge collected at P-CO2 = 10(-3.58) atm without considering any ternary surface complexes of carbonate. Moreover, it was found that the presence of phosphate at relatively high concentration (6 x 10(-4) mol/L) promotes U(VI) sorption. The presence of FA of 20 mg/L has little effect on the sorption of U(VI) oh goethite. (C) 2009 Elsevier Ltd. All rights reserved.

Keywords: Batch, Carbonate, Data, Fa, Fulvic Acid, Goethite, Ionic Strength, Iron, Isotherms, Model, Modeling, PCO2, pH, Phosphate, Sorption, Sorption Isotherms, Surface Complexation, Surface Complexation, U(VI), Uranium(VI), Uranium(VI) Adsorption

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Full Text: [2009\App Rad Iso67, 1007.pdf](2009/App%20Rad%20Iso67,%201007.pdf)

Abstract: Sorption of Ni(II) on Na-montmorillonite was studied under ambient conditions using the batch technique. The effects of pH, solid content, ionic strength and temperature on Ni(II) sorption was also investigated. The kinetic sorption process was well described by a pseudo-second-order rate model. The sorption thermodynamics of Ni(II) on montmorillonite were carried out at 20±2°C, 37±2°C, and 67±2°C, respectively. The thermodynamic parameters, such as standard free energy changes (ΔG°), standard enthalpy change (ΔH°) and standard entropy change (ΔS°), were obtained. The sorption of Ni(II) is an endothermic process. The sorption of Ni(II) on montmorillonite was strongly dependent on pH values and temperature, and independent of ionic strength. At acidic pH, sorption of Ni(II) is dominated by cation exchange and outer-sphere surface complexation, but at alkaline pH the sorption is dominated by inner-sphere surface complexation. (C) 2009 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Aqueous-Solutions, Chelating Resin, Foreign Ions, Fulvic-Acid, Humic-Acid, Humic, Fulvic Acid, Ionic Strength, Montmorillonite, MX-80 Bentonite, Ni(II), Ni(II), pH, Sorption, Thermodynamic Data, Wall Carbon Nanotubes

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Full Text: [2009\App Rad Iso67, 1269.pdf](2009/App%20Rad%20Iso67,%201269.pdf)

Abstract: The adsorption of cobalt on samples from a potential waste repository site in an arid region was investigated in batch experiments, as a function of various solution phase parameters including the pH and ionic strength. The samples were characterized using a range of techniques, including BET surface area measurements, total clay content and quantitative X-ray diffraction. The statistical relationships between the measured cobalt distribution coefficients (K-d values) and the solid and liquid phase characteristics were assessed. The sorption of cobalt increased with the pH of the aqueous phase. In experiments with a fixed pH value, the measured K-d values were strongly correlated to the BET surface area, but not to the amount of individual clay minerals (illite, kaolinite or smectite). A further set of sorption experiments was undertaken with two samples of distinctive mineralogy and surface area, and consequently different sorption properties. A simple surface complexation model (SCM) that conceptualized the surface sites as having equivalent sorption properties to amorphous Fe-oxide was moderately successful in explaining the pH dependence of the sorption data on these samples, Two different methods of quantifying the input parameters for the SCM were assessed. While a full SCM for cobalt sorption on these complex environmental substrates is not yet possible, the basic applicability and predictive capability of this type of modeling is demonstrated. A principal requirement to further develop the modeling approach is adequate models for cobalt sorption on component mineral phases of complex environmental sorbents. (C) 2009 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Adsorption, Batch, Bet, Bet Surface Area, Clay, Clay Minerals, Cobalt, Coefficients, Complex, Complexation, Data, Distribution Coefficients, Goethite, Ionic Strength, Ionic-Strength, K-D, Kaolinite, Mineral Assemblages, Minerals, Mobility, Model, Modeling, Models, Oxides, pH, Ph Dependence, Properties, Sequential Extraction Procedure, Sorption, Sorption, Sorption Properties, Surface Area, Surface Complexation Model, X-Ray, X-Ray Diffraction

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Full Text: [2009\App Rad Iso67, 1332.pdf](2009/App%20Rad%20Iso67,%201332.pdf)

Abstract: Organo-ceramic hybrid materials have been developed as the separation media for a Sr-90/Y-90 generator system. Currently available Y-90 is generally extracted from a mother solution by a solvent extraction or a successive column operation. Both processes are Successfully applied to produce Y-90 with a high quality standard. However, such processes are highly dependent on what kind of extracting materials are employed. Hence, some of the previously developed technologies are not adequate for a Y-90 production because of a waste generation or leaching of radiolytic end-products from the extracting materials. In this study, high performance organo-ceramic hybrid materials have been applied for the extraction of Y-90. The hybrid materials have properties of both a ceramic and a solvent extractant by molecularly implanting the extracting molecules on to the ceramic surfaces. In this study, organo-phosphorus functionalized hybrid materials are synthesized and tested as the separation media for the Y-90/Sr-90 generator system. An adsorptive extraction with a small Sep-Pak type column can recover more than 92% of Y-90 with a contamination ratio of Sr-90/Y-90 = 1.2 x 10(-5) from the mother solution and 70% with 5 X 10(-7). (c) 2009 Published by Elsevier Ltd.

Keywords: Adsorption, Contamination, Extraction, Generator, Generator, Molecules, Performance, Processes, Production, Properties, Radioisotopes, Separation, Solvent Extraction, Strontium, Surfaces, System, Y-90, Yttrium

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Full Text: [2009\App Rad Iso67, 1582.pdf](2009/App%20Rad%20Iso67,%201582.pdf)

Abstract: Attapulgite was investigated to remove UO22+ from aqueous solutions because of its strong sorption capacity. Herein, the attapulgite sample was characterized by Fourier transform infrared spectra (FTIR), X-ray diffraction (XRD) and acid-base titration in detail. Sorption of UO22+ on attapulgite was strongly dependent on pH values and ionic strength. The presence of humic acid enhanced the sorption of UO22+ on attapulgite obviously because of the strong complexation of humic acid (HA) with UO22+ on attapulgite surface. Sorption of UO22+ on attapulgite was mainly dominated by ion-exchange or outer-sphere complexation at low pH values, and by inner-sphere complexation at high pH values. The results indicated that attapulgite was a suitable material for the preconcentration and solidification of UO22+ from large volume of solutions because of its negative surface charge and large surface areas. (C) 2009 Elsevier Ltd. All rights reserved.

Keywords: Aqueous Solutions, Aqueous-Solution, Attapulgite, Capacity, Complexation, Effect of pH, Foreign Ions, Fourier Transform Infrared, Fourier Transform Infrared Spectra, Ftir, Fulvic-Acid, Ha, Humic Acid, Humic, Fulvic Acid, Infrared, Infrared Spectra, Ion Exchange, Ionic Strength, Maya-Blue, Mx-80 Bentonite, Na-Rectorite, pH, Powder-Diffraction, Preconcentration, Sorption, Sorption Capacity, Surface Complexation, Temperature, Titration, UO22+, Uranium(VI), Volume, X-Ray, X-Ray Diffraction, Xrd

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Full Text: [2009\App Rad Iso67, 1600.pdf](2009/App%20Rad%20Iso67,%201600.pdf)

Abstract: Bentonite has been widely studied in nuclear waste management because of its special physicochemical properties. In this work, the sorption of Ni(II) from aqueous solution onto GMZ bentonite as a function of contact time, pH, ionic strength, foreign ions, humic acid (HA) and temperature was investigated under ambient conditions. The results indicated that the pseudo-second-order rate equation simulated the kinetic sorption process well. The sorption of Ni(II) on GMZ bentonite was strongly dependent on pH and on ionic strength. At low pH, the sorption of Ni(II) was dominated by outer-sphere surface complexation and ion exchange with Na+/H+ on GMZ bentonite surfaces, whereas inner-sphere surface complexation was the main sorption mechanism at high pH. A positive effect of HA on Ni(II) sorption was found at pH < 8, whereas a negative effect was observed at pH > 8. The Langmuir, Freundlich, and D-R models were used to simulate the sorption isotherms of Ni(II) at three different temperatures: 303.15, 318.15 and 333.15 K. The thermodynamic parameters (ΔH°, ΔS° and ΔG°) of Ni(II) sorption on GMZ bentonite at the three different temperatures were calculated from the temperature-dependent sorption isotherms. The results indicated that the sorption process of Ni(II) on GMZ bentonite was endothermic and spontaneous. Experimental results indicate that GMZ bentonite is a suitable sorbent for pre-concentration and solidification of Ni(II) from large volume solutions. (C) 2009 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Aqueous Solution, Aqueous-Solution, Bentonite, Complexation, Desorption, Endothermic, Foreign Ions, Freundlich, Fulvic-Acid, Function, GMZ Bentonite, Humic Acid, Ion Exchange, Ion-Exchange, Ionic Strength, Ions, Isotherms, Kinetic, Kinetic Sorption, Langmuir, Management, Mechanism, Models, MX-80 Bentonite, Na-Rectorite, Ni(II), Ni2+, pH, Pre-Concentration, Preconcentration, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Rate, Removal, Rights, Solution, Solutions, Sorbent, Sorption, Sorption Isotherms, Sorption Mechanism, Sorption Process, Spectroscopy Methods, Strength, Surface, Surface Complexation, Surfaces, Temperature, Th(IV), Thermodynamic, Thermodynamic Data, Thermodynamic Parameters, Volume, Waste, Waste Management, Work

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Full Text: [2009\App Rad Iso67, 1764.pdf](2009/App%20Rad%20Iso67,%201764.pdf)

Abstract: A newly designed inorganic ion exchanger, based on aluminum vanadate, has been synthesized and characterized by elemental analysis, spectroscopic tools and powdered X-ray diffraction. The insoluble poorly polycrystalline material is highly stable towards thermal and radiation doses and in various chemical environments. The data of exchange capacities of the solid material for the different alkali and alkaline metal ions determined by batch technique show that the compound can be employed as an ion exchanger. The successful radiochemical separations of the no carrier added daughter nuclides: Ba-137m and In-115m from their respective parents present in equilibrium mixtures have been carried out using this material. Elutions of Ba-137m and In-115m were performed using 0.0426 mol L-1 ascorbic acid solution and 4.0 mol L-1 HCl, respectively, after sorption of the equilibrated mixtures, Cs-137-Ba-137m at 0.01 mol L-1 HCl medium and Cd-115-In-115m at pH 7.0, respectively. In another column operation, it has been observed that the separation of gold and silver is possible with the help of the eluents, 0.01% alcoholic solution of Rhodamine-B for gold and 0.5% thiourea solution in 0.1 mol L-1 HClO4 for silver, respectively, after the sorption of no carrier added onto this material at pH 2.0, at a no carrier added level. (C) 2009 Published by Elsevier Ltd.

Keywords: Absorption Spectrometric Determination, Aluminum, Analysis, Ascorbic Acid, Au-198-Ag-110m, Batch, Batch Technique, Cd-115-In-115m, Complexes, Cs-137-Ba-137m, Data, Equilibrium, Exchange, Gold, Inorganic Ion Exchanger, Ion Exchangers, Metal Ions, pH, Preconcentration, Rhodamine B, Rhodamine-B, Separation, Silver, Sorption, X-Ray, X-Ray Diffraction, Y-90

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Full Text: [2010\App Rad Iso68, 239.pdf](2010/App%20Rad%20Iso68,%20239.pdf)

Abstract: A novel impregnated polymeric resin was practically tested as adsorbent material for removal of some hazardous radionuclides from radioactive liquid waste. The applicability for the treatment of low-level liquid radioactive waste was investigated. The material was prepared by loading 4,4’(5’)di-t-butylbenzo 18 crown 6 (DtBB18C6) onto poly(acrylamide-acrylic acid-acrylonitril)-N, N’-methylenediacrylamide (P(AM-AA-AN)-DAM). The removal of Cs-134, Co-60, Zn-65, and Eu(152+154) onto P(AM-AA-AN)-DAM/DtBB18C6 was investigated using a batch equilibrium technique with respect to the pH, contact time, and temperature. Kinetic models are used to determine the rate of sorption and to investigate the mechanism of sorption process. Five kinetics models, pseudo-first-order, pseudo-second-order, intra-particle diffusion, homogeneous particle diffusion (HPDM), and Elovich models, were used to investigate the sorption process. The obtained results of kinetic models predicted that, pseudo-second-order is applicable: the sorption is controlled by particle diffusion mechanism and the process is chemisorption. The obtained values of thermodynamics parameters, ΔHº, ΔSº, and ΔGº indicated that the endothermic nature, increased randomness at the solid/solution interface and the spontaneous nature of the sorption processes. (C) 2009 Elsevier Ltd. All rights reserved.

Keywords: 18-Crown-6, Activated Carbon, Adsorbent, Adsorption, Aqueous-Solutions, Batch, Cesium, Chemisorption, Crown Ether, Diffusion, Elovich, Endothermic, Equilibrium, Ether, Extraction, Hazardous Radionuclides, Impregnated Polymeric Material, Interface, Intra-Particle Diffusion, Intraparticle Diffusion, Ions, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Kinetics Models, Liquid, Liquid Radioactive Waste, Liquid Waste, Loading, Mechanism, Models, N, Particle Diffusion, pH, Polymeric, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Radionuclides, Randomness, Reaction, Removal, Removal, Resin, Rights, Sorption, Sorption Process, Temperature, Thermodynamic Parameters, Thermodynamics, Time, Treatment, Waste

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Full Text: [2009\App Rad Iso-Ho.pdf](2009/App%20Rad%20Iso-Ho.pdf); [2009\App Rad Iso-Ho1.pdf](2009/App%20Rad%20Iso-Ho1.pdf); [2010\App Rad Iso68, 466.pdf](2010/App%20Rad%20Iso68,%20466.pdf)

Keywords: Adsorption, Aqueous-Solutions, Cadmium Removal, Carbon Nanotubes, Chitin, Equilibrium, Ionic Strength, Ni2+, Peat, pH, Sorption, Temperature

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Full Text: [2010\App Rad Iso68, 467.pdf](2010/App%20Rad%20Iso68,%20467.pdf)

Keywords: Dose Calculations, Effective Point, Ionic Strength, pH, Photon Beams, Sorption, Temperature

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Full Text: [2010\App Rad Iso68, 2140.pdf](2010/App%20Rad%20Iso68,%202140.pdf)

Abstract: In this work the desorption of cesium ions from crushed granite in synthetic groundwater (GW) and seawater (SW) was investigated. Results were compared with those obtained in deionized water (DW) and in two kinds of extraction solutions, namely: MgCl2 and NaOAc (sodium acetate). In general, the desorption rate of Cs from crushed granite increased proportionally with initial Cs loadings. Also, amounts of desorbed Cs ions followed the tendency in the order SW > GW > NaOAc approximate to MgCl2 > DW solutions. This indicated that the utilization of extraction reagents for ion exchange will underestimate the Cs desorption behavior. Fitting these experimental data by Langmuir model showed that these extraction reagents have reduced Cs uptake by more than 90%, while only less than 1% of adsorbed Cs ions are still observed in GW and SW solutions in comparison to those in DW. Further SEM/EDS mapping studies clearly demonstrate that these remaining adsorbed Cs ions are at the fracture areas of biotite. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Cesium, Comparison, Cs-137, Data, Desorption, Exchange, Extraction, Granite, Hanford Site, Ion Exchange, Langmuir, Langmuir Model, Mapping, Minerals, Model, Radionuclide, Safety Assessment, Seawater, Sequential Extraction Procedure, Soils, Sorption, Speciation, Subsurface Sediments, Surface Distribution, Uptake, USA, Water

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Full Text: [2010\App Rad Iso68, 2208.pdf](2010/App%20Rad%20Iso68,%202208.pdf)

Abstract: In this work granular activated carbon has been chosen as an absorbent in order to investigate the Cr(VI) reduced by adsorption experiments. Several batch chromium-sorption experiments were carried out using 0.25 g of granular activated carbon in 50 mL aqueous solution containing approximately 70 and 140 mg L-1 of Cr(VI) and Cr(III), respectively. Cr-K beta fluorescence spectra of Cr adsorbed in a carbon matrix and Cr reference materials were measured using a high-resolution Johann-type spectrometer. Based on evidence from the Cr-Kb satellite lines, the Cr(VI) reduction process has actually happened during metal adsorption by the activated carbon. (C) 2010 Elsevier Ltd All rights reserved.

Keywords: Activated Carbon, Adsorption, Batch, Carbon, Chromium(VI), Cr, Cr(III), Cr(VI), Cr(VI) Reduction, Dependence, Fluorescence, Granular Activated Carbon, High-Resolution K Beta Spectroscopy, Intensities, Metal Adsorption, Metal-Ions, Process, Reduction, Removal, Spectra, Transition Energies, Waste, X-Ray

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Full Text: [2010\App Rad Iso68, 2016.pdf](2010/App%20Rad%20Iso68,%202016.pdf)

Abstract: In this work adsorption of uranium on natural, heat and acid treated sepiolite was studied. For acid treatment HCl and H2SO4 were used separately. Heat and acid treatment caused some, changes in sepiolite such as surface area, micropore volume (cm(3)/g) and average pore diameter (A). Different amounts of Mg ions were extracted from the lattice depending on the type of acid. After acid treatment with MCl, the amount of Mg left in the sepiolite changed a little. During H2SO4 treatment the sepiolite structure was progressively transformed into amorphous silica. These heat and acid treatments changed adsorption capacity and mechanism of uranium on sepiolite. Data obtained from the adsorption experiments were applied to Langmuir and Dubinin-Radushkevich (D-R) adsorption isotherms. Using these isotherms different adsorption capacities were found for natural and treated sepiolite samples. The capacity values were 3.58 x 10(-3), 3.14 x 10(-3), 2.78 x 10(-3) and 1.55 x 10(-3) mol/g for HCl treated, heat treated, natural and H2SO4 treated sepiolite samples, respectively. In order to evaluate the adsorption mechanism adsorption energies were calculated by the D-R isotherm. According to the adsorption energy values uranium fixed to the natural and heat treated sepiolite surface with ion exchange (12.75 and 12.12 kJ/mol, respectively). Simple physical attractions were the driving force for adsorption on HCl and H2SO4 treated ones (6.62 and 6.87 kJ/mol, respectively). (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Acid Treatment, Acidic Treatment, Adsorption, Adsorption Capacity, Adsorption Isotherms, Adsorption Mechanism, Capacity, Dubinin-Radushkevich, Exchange, H2SO4, Ion Exchange, Isotherm, Isotherms, Kinetics, Langmuir, Mechanism, Micropore Volume, Pore, Porosity, Sepiolite, Silica, Sorption, Surface Area, Treatment, Uranium, Volume

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Full Text: [2011\App Rad Iso69, 614.pdf](2011/App%20Rad%20Iso69,%20614.pdf)

Abstract: This work presents an investigation on the bio-sorption of Tl-201 radionuclide used in nuclear medicine on olive pomace. The experimental parameters were chosen as temperature, the initial pH of the solution, stirring speed, bio-sorbent dose and nominal particle size of bio-sorbent. The initial pH of the solution was found to be the most effective parameter. Thermodynamic analysis gave negative values for ΔG and ΔH. The kinetics of the bin-sorption process fitted very well to the pseudo-second order rate model. (C) 2010 Elsevier Ltd. All rights reserved.

Keywords: Adsorption, Adsorption, Aqueous-Solutions, Bio-Sorption, Biosorption, Dye, Kinetics, Olive Pomace, Parameters, Radionuclides, Removal, Strontium, Thallium-201, Waste

# Title: Applied Scientific Research Section A-Mechanics Heat Chemical Engineering Mathematical Methods

Full Journal Title: [Applied Scientific Research Section A-Mechanics Heat Chemical Engineering Mathematical Methods](http://www.springerlink.com/content/x3767820qx296n48/)

ISO Abbreviated Title:

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ISSN:

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: Impact Factor

Notes: highly cited

? Brinkman, H.C. (1947), A Calculation of the viscous force exerted by a flowing fluid on a dense swarm of particles. *Applied Scientific Research Section A-Mechanics Heat Chemical Engineering Mathematical Methods*, **1** (1), 27-34.

Full Text: [-1959\App Sci Res Sec A1, 27.pdf](-1959/App%20Sci%20Res%20Sec%20A1,%2027.pdf)

Abstract: A calculation is given of the viscous force, exerted by a flowing fluid on a dense swarm of particles. The model underlying these calculations is that of a spherical particle embedded in a porous mass. The flow through this porous mass is decribed by a modification of Darcy’s equation. Such a modification was necessary in order to obtain consistent boundary conditions. A relation between permeability and particle size and density is obtained. Our results are compared with an experimental relation due to Carman.

Keywords: SCI

# Title: Applied Soil Ecology

Full Journal Title: [Applied Soil Ecology](http://www.sciencedirect.com/science/journal/09291393)

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Russell, D.J. and Alberti, G. (1998), Effects of long-term, geogenic heavy metal contamination on soil organic matter and microarthropod communities, in particular Collembola. *Applied Soil Ecology*, **9** (1-3), 483-488.

Full Text: [1998\App Soi Eco9, 483.pdf](1998/App%20Soi%20Eco9,%20483.pdf)

Abstract: The effects of long-term, geogenic heavy-metal contamination on the soil zoocoenoses and decomposition processes were studied in two beech forest sites near Heidelberg, Germany. One of these was heavily contaminated with Pb, Cd, and Zn. In the data presented, the condition of the soil organic matter (SOM) and the microarthropod communities in the two sites are compared. Only negligible differences between them were noted in the litter layers. However, in the mineral horizons, the contaminated site showed an accumulation of SOM of up to 100% relative to the reference site and of humic substances up to 200%. SOM was less degraded and humic substances less polymerized than in the reference site. The initial breakdown of litter material appeared similar in both sites, with differences seeming to occur only in later stages of decomposition. Collembola community structure was highly skewed in both sites with Isotoma notabilis and Folsomia manolachei strongly dominant. The greatest site differences were noted among subdominant species living in those soil horizons with the largest differences in SOM. (C) 1998 Elsevier Science B.V.

Keywords: Forest Soil, Heavy Metals, Soil Organic Matter, Collembola, Orchesella-Cincta Collembola, Decomposition Processes, Litter, Lead, Populations, Gradient, Impact, Competition, Resistance, Pollution

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Full Text: [2008\App Soi Eco40, 138.pdf](2008/App%20Soi%20Eco40,%20138.pdf)

Abstract: In view of the ubiquitous co-existence of methamidophos, acetochlor and copper (Cu) in agricultural soils, ecological detoxification of methamidophos in phaiozem by earthworms was examined using the detoxic incubation experiments with illumination. It was validated that the earthworm Eisenia fetida is a useful soil animal in the process of methamidophos detoxification as the assistance of soil microbes and enzymes. Due to the action of earthworms, the half life of methamidophos with concentration of 15 mg/kg in phaiozem could decrease from 5.61 days to 5.08 days. Dynamics of methamidophos detoxification by earthworms could conform to the logistic model. Under the condition of multiple pollution combined with acetochlor (20 mg/kg) and Cu (300 mg/kg), ecological detoxification of methamidophos by earthworms became complicated. Acetochlor played a promoting role in the biodegradation of methamidophos to some extent, while it was basically inhibited by Cu. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Ecological Detoxification, Bioremediation, Earthworm, Methamidophos, Multiple Pollution, Soil Ecology, Sorption-Desorption Behavior, Pesticides Methamidophos, Soil, Toxicity, System, Biodegradation, Degradation, Glyphosate, Exposure, Acephate

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Publisher Address: 201B Broadway St, Frederick, MD 21701

Subject Categories:

Instruments & Instrumentation Spectroscopy: Impact Factor

Shlifshteyn, A. and Lang, F.D. (1993), Quantitative spectrographic analysis for *in situ* continuous emission monitoring. *Applied Spectroscopy*, **47** (4), 479-488.

Abstract: To determine the thermal efficiency and the effluent flow ratesof fossil-fired boilers, Exergetic Systems has developed an in situ, dispersive interferometer. This Emissions Spectral Radiometer/Fuel Flow instrument (ESR/FF) can measure effluent concentrations with the high accuracies needed to make efficiency determinations and to meet environmental control requirements. This paper discusses the software algorithms developed to process the data from these instruments to provideaccurate peak-to-peak normalization of measured absorbance datato HITRAN-generated data. After implementation of both signal-domain and frequency-domain normalization, the frequency-domainmethod was chosen because it was significantly faster to process. With the use of this analysis method and the pre-installation calibration method described herein, flue gas compounds are quantified with a sensitivity of 10 DELTAppm. This inexpensive and reliable instrument yields accurate quantitative analysis of flue gases for continuous emission monitoring (CEM) of fossil-fired boilers.

Francioso, O., Sanchez-Cortes, S., Tugnoli, V., Ciavatta, C., Sitti, L. and Gessa, C. (1996), Infrared, Raman and nuclear magnetic resonance (1H, 13C and 31P) spectroscopy in the study of fractions of peat humic acids. *Applied Spectroscopy*, **50**, 1165-1174.

# Title: Applied Spectroscopy Reviews

Full Journal Title: Applied Spectroscopy Reviews

ISO Abbreviated Title:

JCR Abbreviated Title:

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Issues/Year:

Journal Country/Territory:

Language:

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Subject Categories:

: Impact Factor

? Pawlak, Z. and Pawlak, A.S. (1997), A review of infrared spectra from wood and wood components following treatment with liquid ammonia and solvated electrons in liquid ammonia. *Applied Spectroscopy Reviews*, **32** (4), 349-383.

Abstract: The chemical changes that occur in wood and wood components (cellulose, holocellulose and lignin) following treatment with liquid ammonia and solvated electrons (e(s)(-)) in liquid ammonia have been investigated using FT-IR spectroscopy.

When ammonia penetrates into a wood structure, all carboxylate groups will react with ammonia to form ammonium salts, aldehydic and ketonic groups will follow a similar reaction to produce imines, and ester groups will react to form amides.

After treatment with (e(s)(-)) in liquid ammonia, wood samples show diminished absorption around 1513 cm-1, a position corresponding to aromatic groups, and diminished absorption peaks associated with aldehydic, ketonic, and ester groups.

The overall changes in the IR spectra of cellulose in liquid ammonia and (e(s)(-)) in liquid ammonia are not dramatic. The IR spectra of the isolated holocellulose after treatment with (e(s)(-)) in liquid ammonia have intensities and band shape similar to those of cellulose. The isolated lignin behaves in a manner similar to wood, in that the liquid ammonia causes some decrease in the intensities of absorptions associated with C-O and C = O bands, and increase in strength of the amide functional group at 1600 cm-1. The resulting extracts of wood, following treatment with (e(s)(-)) in liquid ammonia, appear to loose their “aromaticity”.

Because wood has long been used, and still is used extensively as an important constructional material, the changes in mechanical characteristics caused by the action of various reducing agents appears to have been an important area of scientific interest. The following review focuses on the chemical changes in the functional groups of the surface moieties of wood when treated with a reducing agent, such as (e(s)(-) + NH3liq), using infrared spectroscopy.

Keywords: Surfaces

# Title: Applied Statistics

Full Journal Title: Applied Statistics

ISO Abbreviated Title:

JCR Abbreviated Title:

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Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Oliver, F.R. (1964), Methods of estimating the logistic growth function. *Applied Statistics*, **13**, 57-66.

Full Text: [1960-80\App Sta13, 57.pdf](1960-80/App%20Sta13,%2057.pdf)

# Title: Applied Surface Science

Full Journal Title: [Applied Surface Science](http://www.sciencedirect.com/science/journal/01694332)

ISO Abbreviated Title: Appl. Surf. Sci.

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Subject Categories:

Chemistry, Physical: Impact Factor 1.222, 48/91 (2000); Impact Factor 1.068, 12/93 (2001)

Materials Science, Coatings & Films: Impact Factor 1.068, 1/16 (2001)

Physics, Applied: Impact Factor 1.068, 6/71 (2001)

Physics, Condensed Matter: Impact Factor 1.068, 3/55 (2001)

Nawaz, R., Elliott, M. and Woolf, D.A. (1998), Effects growth interruption upon silicon delta layers in gallium arsenide. *Applied Surface Science*, **123-124**, 471-475.

Full Text: [A\App Sur Sci123-124, 471.pdf](A/App%20Sur%20Sci123-124,%20471.pdf)

Abstract: We describe a study of samples grown by molecular-beam epitaxy, designed to examine the limitations to silicon (Si) δ-doping of gallium arsenide (GaAs) at elevated growth temperatures. Samples (Si δ-doped to 1×1013 cm-2) were grown at 630°C, during which the growth was paused (for times between 0 and 18 min) after depositing the Si. Total electron sheet densities were measured (using Hall and Shubnihov-de Haas (SdH) effect measurements) to determine the electrically active Si concentration. The free electron concentration showed a reduction from about 8×1012 cm-2 for zero pause time; to 5×1012 cm-2 for 18 min pause time. These results can be explained convincingly using simple models of impurity background in the MBE chamber or surface aggregation. Further experiments to distinguish these mechanisms are discussed.

Keywords: Delta Doping, Mbe Growth, Transport

Tanaka, K., Matsumoto, Y., Fujita, T. and Okawa, Y. (1998), Nano-scale patterning of metalsurfaces by adsorption and reaction. *Applied Surface Science*, **130-132**, 475-483.

Full Text: [A\App Sur Sci130-132, 475.pdf](A/App%20Sur%20Sci130-132,%20475.pdf)

Abstract: Nano-scale patterning of the metalsurfaces was attained by the adsorption and the reaction of metal atoms. Growth of metal islands on the metalsurfaces was markedly influenced by preparing the surface with preadsorption and/or by the reconstruction. Adsorption of oxygen on Cu (100) form randomly coalesced nano-size c (2×2)-O which undergoes the (2 root 2×root 2) R45 degrees reconstruction with increasing the oxygen coverage. In contrast, N-atoms on Cu (100) make well ordered array of squared c (2×2)-N patches of ca. 50 Angstrom (2). Cuatoms deposited on the nano-size c (2×2)-O Cu (100) form one atomic height rectangular Cuislands but Ni atoms undergo no orientational growth of Ni islands. Ni atoms deposited on the (2 root 2×root 2) R45 degrees-O Cu (100) surface, however, gave an extremely anisotropic growth of Ni-wire. In contrast, when Ni atom was deposited on a Cu (100) surface having a super-grid like pattern made by the boundaries of squared c (2×2)-N patches, one atomic height Ni islands grew at the crossings of the super-grid. These phenomena are distinctive from the chemical reaction of surface atoms which provides various quasi-compounds. The reaction of Cuwith (-Ag-O-) strings on Ag (110) provided a new quasi-compound of (-Cu-O-) on Ag (110), which undergoes a reversible reaction of (-Cu-O-) reversible arrow (Cu) (6) + O-2. In addition, the (-Ag-O-) strings on Ag (110) undergo selective photo-erasing These results suggest that chemical reaction is a promising tool for making atomic-scale pattern on the surface.

Dietrich, D., Witke, K., Roβler, R. and Marx, G. (2001), Raman spectroscopy on *Psaronius sp*.: A contribution to the understanding of the permineralization process. *Applied Surface Science*, **179** (1-4), 230-233.

Full Text: [A\App Sur Sci179, 230.pdf](A/App%20Sur%20Sci179,%20230.pdf)

Abstract: Samples of the permineralized tree fern Psaronius sp. from the Lower Permian Rotliegend of Chemnitz were examined to find out their chemical composition and structural behavior. The inhomogenic distribution of elementary constituents of oxides, sulfates and carbonates within the silica-matrix consisting of alpha-quartz and chalcedony were formerly detected by analytical X-ray microscopy. Most of the compounds could be revealed by Raman spectroscopy. Calcite and barite developed in small fissures. Iron of different oxidation level is the prevailing pigment in the agate preserved adventitious roots. Coalified cellulose whose structure mainly corresponds to anthracite reflects the anatomical detail of the former organic tissues. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Raman Spectroscopy, Petrified Forest, Permineralization, Iron-Oxides, Silica

? Wloch, J., Rozwadowski, M., Lezanska, M. and Erdmann, K. (2002), Analysis of the pore structure of the MCM-41 materials. *Applied Surface Science*, **191** (1-4), 368-374.

Full Text: [2002\App Sur Sci191, 368.pdf](2002/App%20Sur%20Sci191,%20368.pdf)

Abstract: Problems concerning analysis of the pore structure of the MCM-41 mesoporous materials were discussed on the basis of nitrogen adsorption. Calculation results from both adsorption isotherms and MID simulations were taken into account in this analysis. It was found that the thickness of an adsorption layer in cylindrical mesopores was higher than that in macropores and it increased with the decrease in the mesopore diameter. This increase was relatively slow for the diameters falling down to ca. 4 nm. For this region. the values of the statistical film thickness can be obtained from the equations (e.g., Harkins-Jura) that are independent of the pore size. For pore diameters lower than 4 nm. the above growth is more pronounced and taking into account the dependence of the adsorption layer thickness on the pore diameter appears necessary. (C) 2002 Elsevier Science B.V. All rights reserved.

Keywords: MCM-41, Nitrogen Adsorption, T-PLOT, Md Simulations, Argon Adsorption, Molecular-Sieves, Size Analysis, Nitrogen, Simulations, Silicalite, Alkanes

Şahin, M., Bilgiç, S. and Yilmaz, H. (2002), The inhibition effects of some cyclic nitrogen compounds on the corrosion of the steel in NaCl mediums. *Applied Surface Science*, **195** (1-4), 1-7.

Full Text: [A\App Sur Sci195, 1.pdf](A/App%20Sur%20Sci195,%201.pdf)

Abstract: Corrosion inhibition efficiencies of 3-amino-1,2,4-triazole (3-ATA), 2-amino-1,3,4-thiadiazole (2-ATDA), 5-(p-tolyl)-1,3,4-triazole (TTA), 3-amino-5-methylmercapto-1,2,4-triazole (3-AMTA) and 2-aminobenzimidazole (2-ABA) on steel in sodium chloride media were investigated using Tafel extrapolation method. Potentiostatic current-potential curves were utilized to derive corrosion potentials (E-corr), corrosion current densities (i(corr)), surface coverage degrees (theta) and corrosion inhibition efficiencies (eta, %). 2-ABA was found to have the highest inhibition efficiency in both, 2.5 and 3.5% aqueous NaCl media. For all the inhibitors studied, surface coverage and inhibition efficiency values were found to increase with increasing concentration of the compound concerned. Inspection of the theta values indicate that the adsorption process obeys the Temkin isotherm for TTA and 2-ABA, but the Langmuir isotherm is followed by 3-ATA, 2-ATDA and 3-AMTA. (C) 2002 Elsevier Science B.V All rights reserved.

Keywords: Corrosion, Inhibitor, Cyclic Nitrogen Compounds, Steel, Mild-Steel, Acid-Solutions, Derivatives, Adsorption, Thiourea, Alloy

Steele, W. (2002), Computer simulations of physical adsorption: A historical review. *Applied Surface Science*, **196** (1-4), 3-12.

Full Text: [A\App Sur Sci196, 3.pdf](A/App%20Sur%20Sci196,%203.pdf)

Abstract: Computer simulations of two-dimensional (2D) fluids are discussed in connection with their use in determining the isotherms and thermodynamic properties of monolayers adsorbed on model surfaces. The use of powerful algorithms such as the Grand Canonical Monte Carlo (GCMC) to simulate a greatly expanded range of adsorption systems is then discussed in connection with computations of multilayer adsorption, adsorption on heterogeneous surfaces and in pores. (C) 2002 Published by Elsevier Science B.V.

Keywords: Physical Adsorption, Computer Simulation, Isotherms, Surface Models, Porous Solids, Monolayers, Grand Canonical Monte Carlo, Lennard-Jones Fluids, Monte-Carlo, Monolayer Adsorption, Isosteric Heat, Flat Surfaces, Hard, State, Transitions, Equation, Phase

Deryło-Marczewska, A. and Marczewski, A.W. (2002), Effect of adsorbate structure on adsorption from solutions. *Applied Surface Science*, **196** (1-4), 264-272.

Full Text: [A\App Sur Sci196, 264.pdf](A/App%20Sur%20Sci196,%20264.pdf)

Abstract: Adsorption of benzene derivatives of various chemical properties from dilute aqueous solutions on the Norit activated carbons is investigated. The experimental systems are analyzed in terms of adsorption theory on energetically heterogeneous solids. The relations between the optimization isotherm parameters, i.e. equilibrium constants and heterogeneity parameters, and the solute properties, e.g. number, character and position of functional groups are discussed. (C) 2002 Elsevier Science B.V. All rights reserved.

Keywords: Activated Carbon, Solute Adsorption, Energetic Heterogeneity, Effect of Solute Structure, Dilute Aqueous-Solution, Activated Carbon, Physical Adsorption, Equilibrium

? Ismadji, S. and Bhatia, S.K. (2002), Use of liquid phase adsorption for characterizing pore network connectivity in activated carbon. *Applied Surface Science*, **196** (1-4), 281-295.

Full Text: [2002\App Sur Sci196, 281.pdf](2002/App%20Sur%20Sci196,%20281.pdf)

Abstract: A simple percolation theory-based method for determination of the pore network connectivity using liquid phase adsorption isotherm data combined with a density functional theory (DFT)-based pore size distribution is presented in this article. The liquid phase adsorption experiments have been performed using eight different esters as adsorbates and microporous-mesoporous activated carbons Filtrasorb-400, Norit ROW 0.8 and Norit ROX 0.8 as adsorbents. The density functional theory (DFT)-based pore size distributions of the carbons were obtained using DFT analysis of argon adsorption data. The mean micropore network coordination numbers, Z, of the carbons were determined based on DR characteristic plots and fitted saturation capacities using percolation theory. Based on this method, the critical molecular sizes of the model compounds used in this study were also obtained. The incorporation of percolation concepts in the prediction of multicomponent adsorption equilibria is also investigated, and found to improve the performance of the ideal adsorbed solution theory (IAST) model for the large molecules utilized in this study. (C) 2002 Elsevier Science B.V. All rights reserved.

Keywords: Activated Carbon, Activated Carbons, Adsorption, Adsorption Isotherm, Carbon, Characterization, Connectivity, Elsevier, Ideal Adsorbed Solution Theory, Isotherm, Model, Multicomponent, Network Connectivity, Nitrogen Sorption Measurements, Porous Solids, Science, Simulation, Size, Theory

Faur-Brasquet, C., Reddad, Z., Kadirvelu, K. and Le Cloirec, P. (2002), Modeling the adsorption of metal ions (Cu2+, Ni2+, Pb2+) onto ACCs using surface complexation models. *Applied Surface Science*, **196** (1-4), 356-365.

Full Text: [A\App Sur Sci196, 356.pdf](A/App%20Sur%20Sci196,%20356.pdf)

Abstract: Activated carbon cloths (ACCs), whose efficiency has been demonstrated for microorganics adsorption from water, were here studied in the removal of metal ions from aqueous solution. Two ACCs are investigated, they are characterized in terms of porosity parameters (BET specific surface area, percentage of microporosity) and chemical characteristics (acidic surface groups, acidity constants, point of zero charge). A first part consists in the experimental study of three metal ions removal (Cu2+ Ni2+ and Pb2+) in a batch reactor. Isotherms modeling by Freundlich and Brunauer-Emmett-Teller (BET) equations enables the following adsorption order: Cu2+ > Ni2+ > Pb2+ to be determined for adsorption capacities on a molar basis. It may be related to adsorbates characteristics in terms of electronegativity and ionic radius. The influence of adsorbent’s microporosity is also shown. Adsorption experiments carried out for pH values ranging from 2 to 10 demonstrate: (i) an adsorption occurring below the precipitation pH; (II) the strong influence of pH, with a decrease of electrostatic repulsion due to the formation of less charged hydrolyzed species coupled with a decrease of activated carbon surface charge as pH increases. The second part focuses on the modeling of adsorption versus the pH experimental data by the diffuse layer model (DLM) using Fiteql software. The model is efficient to describe the system behavior in the pH range considered. Regarding complexation constants, they show the following affinity for ACC: Pb2+ > Cu2+ > Ni2+. They are related to initial concentrations used for the three metal ions. (C) 2002 Elsevier Science B.V. All rights reserved.

Keywords: Adsorption, Activated Carbon Cloths, Heavy Metals, Water Treatment, Surface Complexation Models, Activated Carbon, Heavy-Metals, Aqueous-Solutions, Single, Cd, Systems, Cu(II), Oxide, Zn, (HYDR)Oxides

Podkościelny, P., Dąbrowski, A. and Marijuk, O. (2003), Heterogeneity of active carbons in adsorption of phenol aqueous solutions. *Applied Surface Science*, **205** (1-4), 297-303.

Full Text: [A\App Sur Sci205, 297.pdf](A/App%20Sur%20Sci205,%20297.pdf)

Abstract: Energetic heterogeneity of activated carbons prepared from bituminous coals is investigated on the basis of adsorption isotherms of phenol from the dilute aqueous solutions. The Langmuir-Freundlich (L-F) equation has been used to estimate the monolayer capacity values of carbons studied. Adsorption energy distribution functions have been calculated by using algorithm INTEG based on a regularization method. Analysis of these functions for carbons provided significant comparative information about their heterogeneity. (C) 2002 Elsevier Science B.V. All rights reserved.

Keywords: Adsorption from Solutions, Heterogeneity, Activated Carbons, Surface Phase Capacity Statistical Analysis, Weak Organic Electrolytes, Liquid Adsorption, Solid-Surfaces, Water, Activation, Abilities, Capacity, Systems, Coals, Dyes

Humblot, V. and Raval, R. (2005), Chiral metal surfaces from the adsorption of chiral and achiral molecules. *Applied Surface Science*, **241** (1-2), 150-156.

Full Text: [2005\App Sur Sci241, 150.pdf](2005/App%20Sur%20Sci241,%20150.pdf)

Abstract: Chiral surfaces, capable of existing in two distinguishable mirror forms that cannot be superimposed, are attracting worldwide attention. The adsorption of complex organic molecules provides a means of introducing the ultimate discrimination function of chirality to a metal surface. Here, a comparison of the chiral tartaric acid (HOOC–CHOH–CHOH–COOH) molecule and the achiral succinic acid (HOOC–CH2–CH2–COOH) molecule on a Cu(110) surface is presented. For both molecules, two-dimensional assembly is found to depend strongly on molecule–metal bonding interactions, whereas the presence/absence of the OH groups causes subtler, second-order effects on the self-assembled structure. The driving force for creating chiral organisations is shown to arise from adsorption-induced asymmetrisation, via molecular distortion and/or metal reconstruction of the local adsorption unit. The macroscopic chirality of the surface is then determined by whether nucleation points of both chirality can be equally created, or whether non-degeneracy can be introduced to favour one chirality.

Keywords: Chirality, Surfaces, Chemisorption, Carboxylates

? Qiu, L.G., Xie, A.J. and Shen, Y.H. (2005), Understanding the effect of the spacer length on adsorption of gemini surfactants onto steel surface in acid medium. *Applied Surface Science*, **246** (1-3), 1-5.

Full Text: [2005\App Sur Sci246, 1.pdf](2005/App%20Sur%20Sci246,%201.pdf)

Abstract: Corrosion inhibition of carbon steel in I M hydrochloride acid by gemini surfactants alkanediyl-alpha-,omega-bis(dimethyl dodecylammonium bromide) with different spacer lengths (designated as 12-s-12, s = 2, 3 or 6) was studied using the weight loss method. When monolayer forms on the metal surface below or near critical micelle concentrations (CMCs) of the gemini surfactants, it can be found that gemini surfactant with long spacer (12-6-12) tends to be adsorbed with two hydrophilic ionic groups onto the metal surface site, while gemini surfactants with short spacer (12-2-12 and 12-3-12) tend to be adsorbed with one hydrophilic group onto the meta surface site and the other hydrophilic group is free in solution phase, and further increase in surfactant concentration results in the formation of multilayer. Possible adsorption mechanisms of these gemini surfactants with different spacer lengths above and below their CMCs were discussed in detail, respectively. (c) 2004 Elsevier B.V. All rights reserved.

Keywords: Gemini Surfactant, Adsorption, Mechanism, Corrosion, Inhibition, Metal, Corrosion Inhibition, Mild-Steel, Iron, Chloride, Series

? Erdoğan, S., Önal, Y., Akmil-Başar, C., Bilmez-Erdemoğlu, S., Sarıcı-Özdemir, Ç., Köseoğlu, E. and İçduygu, G. (2005), Optimization of nickel adsorption from aqueous solution by using activated carbon prepared from waste apricot by chemical activation. *Applied Surface Science*, **252** (5), 1324-1331.

Full Text: [2005\App Sur Sci252, 1324.pdf](2005/App%20Sur%20Sci252,%201324.pdf)

Abstract: Waste apricot supplied by Malatya apricot plant (Turkey) was activated by using chemical activation method and K2CO3 was chosen for this purpose. Activation temperature was varied over the temperature range of 400–900 °C and N2 atmosphere was used with 10 °C/min heat rate. The maximum surface area (1214 m2/g) and micropore volume (0.355 cm3/g) were obtained at 900 °C, but activated carbon was predominantly microporous at 700 °C. The resulting activated carbons were used for removal of Ni(II) ions from aqueous solution and adsorption properties have been investigated under various conditions such as pH, activation temperature, adsorbent dosage and nickel concentration. Adsorption parameters were determined by using Langmuir model. Optimal condition was determined as; pH 5, 0.7 g/10 ml adsorbent dosage, 10 mg/l Ni(II) concentration and 60 min contact time. The results indicate that the effective uptake of Ni(II) ions was obtained by activating the carbon at 900 °C.

Keywords: Activated Carbon, Chemical Activation, Waste Apricot, Ni(II) Adsorption, Langmuir

? Casas, R.N., Rodriguez, A.G., Bueno, F.R., Lara, A.E., Calahorro, C.V. and Guijosa, A.N. (2006), Interactions of xanthines with activated carbon. I. Kinetics of the adsorption process. *Applied Surface Science*, **252** (17), 6022-6025.

Full Text: [2006\App Sur Sci252, 6022.pdf](2006/App%20Sur%20Sci252,%206022.pdf)

Abstract: Because of their pharmaceutical and industrial applications, we have studied the adsorption of xanthine derivates (caffeine and theophylline) by activated carbon. To this end, we examined kinetic, equilibrium and thermodynamic aspects of the process. This paper reports the kinetics results. The experimental results indicate that the process was first order in C and the overall process was assumed to involve a single, reversible adsorption–desorption process obeying a kinetic law postulated by us. # 2005 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Activated Carbon, Kinetic Constant

? Nabais, J.V., Carrott, P.J.M., Carrott, M.M.L.R., Belchior, M., Boavida, D., Diall, T. and Gulyurtlu, I. (2006), Mercury removal from aqueous solution and flue gas by adsorption on activated carbon fibres. *Applied Surface Science*, **252** (17), 6046-6052.

Full Text: [2006\App Sur Sci252, 6046.pdf](2006/App%20Sur%20Sci252,%206046.pdf)

Abstract: The use of two activated carbon fibres, one laboratorial sample prepared from a commercial acrylic textile fibre and one commercial sample of Kynol®, as prepared/received and modified by reaction with powdered sulfur and H2S gas in order to increase the sulfur content were studied for the removal of mercury from aqueous solution and from flue gases from a fluidized bed combustor. The sulfur introduced ranged from 1 to 6 wt.% depending on the method used. The most important parameter for the mercury uptake is the type of sulfur introduced rather than the total amount and it was found that the H2S treatment of ACF leads to samples with the highest mercury uptake, despite the lower sulfur amount introduced. The modified samples by both methods can remove HgCl2 from aqueous solutions at pH 6 within the range 290–710 mg/g (ACF) which can be favourably compared with other studies already published. The use of a filter made with an activated carbon fibre modified by powdered sulfur totally removed the mercury species present in the flue gases produced by combustion of fossil fuel.

Keywords: Activated Carbon Fibres, Mercury Adsorption, Sulfur Impregnation, Surface Chemistry

? El-Dougdoug, W.I.A. and El-Mossalamy, E.H. (2006), Synthesis evaluation and adsorption studies of anionic copolymeric surfactants based on fatty acrylate ester. *Applied Surface Science*, **253** (5), 2487-2492.

Full Text: [2006\App Sur Sci253, 2487.pdf](2006/App%20Sur%20Sci253,%202487.pdf)

Abstract: A series of anionic copolymeric surfactants based on n-dodecylacrylate ester (M-1) as hydrophobe, and oxypropylated acrylate ester (MA(4,6)) as hydrophiles, were prepared by copolymerization of n-dodecylacrylate (M-1) and oxypropylated acrylate ester (MA(4,6)) with molar ratio’s (0.3:0.7, 0.4:0.6 and 0.5:0.5, respectively) in presence of benzoyl peroxide as initiator followed by sulfation and neutralization to afforded [(PAS(4)), and (PAS(6))](a-c), as anionic copolymeric surfactant in suitable yield. These derivatives were purified and characterized by 1R and H-1 NMR spectral studies. Surface activity, and biodegradability were evaluated. Adsorption of some copolymeric surfactant on salary sand was investigated to assess possibility of treating waste water streams for removal of Pb2+ and Hg2+ toxic minerals. The effect of several factors governing the adsorption such as initial concentration, temperature, pH, have been studied. (c) 2006 Elsevier B.V. All rights reserved.

Keywords: Dodecylacrylate, Oxypropylation, Copolymerization Reaction, Salary Sand And Adsorption, Styryl Pyridinium Dyes, Silica

? Erentürk, S. and Malkoç, E. (2007), Removal of lead(II) by adsorption onto *Viscum album* L.: Effect of temperature and equilibrium isotherm analyses. *Applied Surface Science*, **253** (10), 4727-4733.

Full Text: [2007\App Sur Sci253, 4727.pdf](2007/App%20Sur%20Sci253,%204727.pdf)

Abstract: The removal efficiency of *Viscum* *album* L. from lead containing aqueous solutions was investigated. The effect of adsorbent mass, pH of solution, initial Pb(II) concentration and temperature was investigated using a batch adsorption technique. The optimum pH for Pb(II) adsorption was found as 3.0 for *Viscum* *album* L. Results were analyzed by the Langmuir, Freundlich, Temkin and Harkins–Jura, equation using linearized correlation coefficient at different temperature. The characteristic parameters for each isotherm have been determined. The Langmuir model agrees very well with experimental data than the other models. According to Langmuir isoterm, the monolayer saturation capacity (*Q*o) is 769.23 mg/g at 25 °C. Models and the isotherm constant were evaluated depending on temperature. Thermodynamic parameters such as Δ*H*o, Δ*S*o and Δ*G*o were calculated. The adsorption process was found to be endothermic and spontaneous. The experimental data were analyzed using the first- and the second-order kinetic models. The rate constants of adsorption for both kinetics models have been calculated. The second-order model provides the best correlation of the data.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Isotherms, Aqueous-Solution, Biosorption, Capacity, Cd(II), Concentration, Cone Biomass, Copper(II) Ions, Correlation, Efficiency, Equilibrium, Fixed-Bed, Freundlich, Isotherm, Kinetic, Kinetic Models, Kinetics, Langmuir, Lead, Metal-Ions, Model, Models, Parameters, Pb(II), pH, Removal, Removal Efficiency, Saturation, Tea Factory Waste, Temperature, Thermodynamic Parameters, Thermodynamics, *Viscum Album* L.

? Gerçel, O., Özcan, A., Özcan, A.S. and Gerçel, H.F. (2007), Preparation of activated carbon from a renewable bio-plant of *Euphorbia rigida* by H2SO4 activation and its adsorption behavior in aqueous solutions. *Applied Surface Science*, **253** (11), 4843-4852.

Full Text: [2007\App Sur Sci253, 4843.pdf](2007/App%20Sur%20Sci253,%204843.pdf)

Abstract: The use of activated carbon obtained from Euphorbia rigida for the removal of a basic textile dye, which is methylene blue, from aqueous solutions at various contact times, pHs and temperatures was investigated. The plant material was chemically modified with H2SO4. The surface area of chemically modified activated carbon was 741.2 m2 g-1. The surface characterization of both plant-and activated carbon was undertaken using FTIR spectroscopic technique. The adsorption process attains equilibrium within 60 min. The experimental data indicated that the adsorption isotherms are well described by the Langmuir equilibrium isotherm equation and the calculated adsorption capacity of activated carbon was 114.45 mg g-1 at 40°C. The adsorption kinetics of methylene blue obeys the pseudo- second-order kinetic model and also followed by the intraparticle diffusion model up to 60 min. The thermodynamic parameters such as ΔG°, ΔH° and ΔS° were calculated to estimate the nature of adsorption. The activation energy of the system was calculated as 55.5 1 kJ mol-1. According to these results, prepared activated carbon could be used as a low-cost adsorbent to compare with the commercial activated carbon for the removal textile dyes from textile wastewater processes. (c) 2006 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Activation, Activation Energy, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Isotherms, Adsorption Kinetics, Adsorption Process, Agricultural Solid-Waste, Basic Dye, Basic Dye, Behavior, Biomass Kinetics, Capacity, Carbon, Characterization, Coir Pith Carbon, Congo Red, Diffusion, Dye, Dyes, Energy, Equilibrium, Euphorbia Rigida, FTIR, H2SO4, Indica Leaf Powder, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Malachite Green, Methylene Blue, Methylene-Blue Adsorption, Model, Modified, Parameters, Plant, Plum Kernels, Potassium Hydroxide, Process, Removal, Rice Husk, Surface, Surface Area, Surface Characterization, Textile, Textile Dye, Textile Dyes, Thermodynamic, Thermodynamic Parameters, Wastewater

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Full Text: [2007\App Sur Sci253, 5814.pdf](2007/App%20Sur%20Sci253,%205814.pdf)

Abstract: Divalent metal cation adsorption from solution onto oxides or activated carbons can be described by the Surface Complexation Model (SCM). We assumed that the adsorbent surface is strongly energetically heterogeneous and derived the adsorption isotherm using rectangular distribution of adsorption energy and condensation approximation for the local isotherm equation. Assuming additionally that the bulk concentration of divalent metal ion is low and does not change considerably during the adsorption process and next applying the Statistical Rate Theory of Interfacial Transport (SRT) we derived the Elovich equation—the experimental formula describing adsorption kinetics.

Keywords: Divalent Metal Ion, Adsorption Kinetics, Oxides, Activated Carbons, Statistical Rate Theory

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Full Text: [2007\App Sur Sci253, 5818.pdf](2007/App%20Sur%20Sci253,%205818.pdf)

Abstract: Static and kinetic studies on adsorption of nitrobenzene, 4-nitrophenol and 4-chlorophenol on two mesoporous carbons are performed. The carbon properties are analyzed by means of nitrogen adsorption. The adsorption experiments are performed in acidic buffer solutions in a wide range of concentrations. The static experiments are analyzed by means of Langmuir-Freundlich and Freundlich isotherms. The Lagergren, pseudo-second-order, intraparticle-diffusion and multi-exponent equations are used in the analysis of kinetic equilibria. (c) 2007 Elsevier B.V. All rights reserved.

Keywords: 4-Chlorophenol, Adsorption, Adsorption Kinetics, Analysis, Aqueous-Solution, Benzene Derivatives, Carbon, Dye, Equilibria, Equilibrium, Experiments, Freundlich, Intraparticle Diffusion, Isotherms, Kinetic, Kinetic Studies, Kinetics, Langmuir-Freundlich, Mesoporous, Mesoporous Carbon, Pseudo-Second-Order, Rights, Silicas, Sorption

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Full Text: [2007\App Sur Sci253, 5827.pdf](2007/App%20Sur%20Sci253,%205827.pdf)

Abstract: The kinetics of adsorption at solid/liquid interfaces is of crucial importance for life on our planet and a variety of technological processes. Let us remark, for instance, that the oxide/electrolyte interface is the largest natural interface existing on the earth. It is very impressive to observe the growing number of the papers reporting on application of adsorption processes in the technologies of environmental protection. The purification of wastewaters, for instance, has become one of the largest industries now. To optimize the cost and performance of the adsorption technology, one has to consider both the costs of sorbents, and the efficiency of the adsorption process. That efficiency is related not only to the equilibrium features of an adsorption system but also to the kinetics of the adsorption process. In technological processes a sorbent and a solution are brought into contact for a limited period of time, so, the rate of the transport of solute molecules from the bulk to the adsorbed phase is here of a primary importance. According to some generally expressed views a sorption process can be described by four consecutive kinetic steps: 1. transport in the bulk solution; 2. diffusion across the film surrounding the sorbent particles; 3. diffusion in the pores of the sorbent; 4. sorption and desorption on the solid surface viewed as a kind of chemical reaction. One of these steps is the slowest and controls the rate of sorption. Depending on the assumption which of these steps is the rate-controlling one, a variety of equations have been proposed in literature to describe that kinetic step. The knowledge of the nature of that kinetic and its theoretical description are very crucial for practical applications, as a key to design the adsorption equipment and conditions for an optimum efficiency to be achieved. So, first some laboratory experimental tests and next their subsequent theoretical analyses are carried out to elucidate the nature of the rate-controlling kinetic process. Such studies may involve a variety of experiments whose time dependence of adsorption is the most fundamental information. Sometimes accompanying studies of the corresponding adsorption equilibria are also carried out, but it seems that the importance of these studies has not been sufficiently recognized. Only such combined study creates a chance to distinguish correctly between one and another kinetic model to be assumed. However, the most essential condition is using proper theoretical expressions to represent the features of some kind of kinetics. Here we will show how the above-mentioned conditions may affect distinguishing between the kinetics which is governed by the intraparticle diffusion, and that in which surface reactions control the rate of sorption in an adsorption system. This is because these two kinetic models are most frequently assumed in the theoretical interpretation of experimental kinetic data. (c) 2007 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorbed Molecules, Adsorption, Adsorption Kinetics, Bubble Evolution, Cost, Costs, Desorption, Diffusion, Efficiency, Energetic Heterogeneity, Environmental, Equilibria, Equilibrium, Equipment, Experimental, Experiments, First, Gas-Adsorption, Information, Interfaces, Intraparticle Diffusion, Isothermal Adsorption, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Kinetics Models, Knowledge, Life, Literature, Model, Models, Papers, Particles, Primary, Protection, Purification, Reaction Kinetics, Reporting, Rights, Solid-Surfaces, Solution, Sorbent, Sorption, Sorption Process, Statistical Rate Theory, Surface Reaction, Technologies, Technology, Temperature-Programmed Desorption, Transport

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Full Text: [2007\App Sur Sci253, 5851.pdf](2007/App%20Sur%20Sci253,%205851.pdf)

Abstract: Adsorption kinetics on energetically heterogeneous surfaces under isothermal conditions is analyzed using the uniform energy distribution model. Considering the quasi-equilibrium of surface diffusion between the adsorption sites with different energy, the kinetic equations d Theta/dt = (k(a)P - A(d)K(diff))(1 - Theta) for first-order adsorption and d Theta/dt = k(a)P(1 - Theta)(2) - A(d)K(diff)Theta(1 - Theta) for dissociative adsorption are obtained, where K-diff is a coefficient describing the surface diffusion equilibrium, which depends on the coverage and the energy distribution. Under isochoric conditions with p decreasing due to adsorption, surface diffusion accelerates the rate towards equilibrium significantly, as observed in static calorimetric adsorption experiments. An approximate solution in Lagergren form is derived for this condition. (c) 2007 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Kinetics, Carbon-Monoxide, Catalysts, Chemisorption, Co, Diffusion, Equilibrium, Experiments, Isothermal, Kinetic, Kinetic Equations, Kinetics, Microcalorimetry, Microkinetic Analysis, Model, Rights, Solid-Surfaces, Solution, Surface Diffusion, Surface Heterogeneity, Thermal Desorption Spectra, Thermodynamics, Tpd Spectra, Tungsten

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Full Text: [2007\App Sur Sci253, 8846.pdf](2007/App%20Sur%20Sci253,%208846.pdf)

Abstract: Thin films are currently gaining interest in many areas such as integrated optics, sensors, friction, reducing coatings, surface orientation layers, and general industrial applications. Recently, molecular self-assembling techniques have been applied for thin film deposition of electrically conducting polymers, conjugated polymers for light-emitting devices, nanoparticles, and noncentrosymmetric-ordered second order nonlinear optical (NOL) devices. Polyelectrolytes self-assemblies have been used to prepare thin films. The alternate immersion of a charged surface in polyannion and a polycation solution leads usually to the formation of films known as polyelectrolyte multilayers. These polyanion and polycation structures are not neutral. However, charge compensation appears on the surface. This constitutes the building driving force of the polyelectrolyte multilayer films. The present approach consists of two parts: (a) the chemisorption of 11-mercaptoundecylamine (MUA) to construct a self-assembled monolayer with the consequent protonation of the amine, and (b) the deposition of opposite charged polyelectrolytes in a sandwich fashion. The approach has the advantage that ionic attraction between opposite charges is the driving force for the multilayer buildup. For our purposes, the multilayer of polyelectrolytes depends on the quality of the surface needed for the application. In many cases, this approach will be used in a way that the roughness factor defects will be diminished. The polyelectrolytes selected for the study were: polystyrene sulfonate sodium salt (PSS), poly vinylsulfate potassium salt (PVS), and polyallylamine hydrochloride (PAH), as shown in Fig. 1. The deposition of polyelectrolytes was carried out by a dipping procedure with the corresponding polyelectrolyte. Monitoring of the alternate deposition of polyelectrolyte bilayers was done by surface analysis techniques such as X-ray photoelectron spectroscopy (XPS), specular reflectance infrared (IR), and atomic force microscopy (AFM). The surface analysis results are presented through the adsorption steps of the polyelectrolytes layer by layer. (c) 2007 Published by Elsevier B.V.

Keywords: Adsorption, AFM, Amine, Analysis, Application, Applications, Atomic Force Microscopy, Atomic-Force Microscopy, BSTO, Building, Charge, Chemisorption, Coatings, Compensation, Conjugated Polymers, Defects, Deposition, Devices, Driving, Film, Films, Formation, Friction, General, Hydrochloride, Immersion, Industrial, Integrated Optics, IR, Layer-By-Layer, Microscopy, Monitoring, Monolayer, Morphology, Multilayer, Nanoparticles, Nonlinear, Optics, Order, Ordered Structure, Orientation, PAH, Photoelectron Spectroscopy, Polyallylamine Hydrochloride, Polyelectrolyte, Polyelectrolyte Multilayers, Polyelectrolytes, Polymers, Polystyrene, Polystyrene Sulfonate Sodium, Polyvinylsulfate Potassium, Potassium, Protonation, Quality, Reflectance, Roughness, Salt, Second Order, Self-Assembled Monolayer, Self-Assemblies, Sensors, Sodium, Spectroscopy, Surface, Surface Analysis, System, Techniques, Thin Film, Thin Films, Water, X-Ray, X-Ray Photoelectron Spectroscopy, XPS

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Full Text: [2008\App Sur Sci254, 3242.pdf](2008/App%20Sur%20Sci254,%203242.pdf)

Abstract: The adsorption of the model sulfur compound dibenzothiophene (DBT) from n-octane solution on to bamboo charcoal (BC) was investigated. The equilibrium and kinetics of DBT adsorption on BC were examined. Adsorption isotherm of DBT on BC was determined and correlated with two well-known isotherm equations (Langmuir and Freundlich). The equilibrium data for DBT adsorption fitted the Freundlich model well. Two simplified kinetic models including pseudo first-order and pseudo second-order equations were selected to follow the adsorption processes. The adsorption of DBT on BC can be best described by a pseudo second-order equation. The parameters of this best-fit kinetic model were calculated and discussed. (c) 2007 Elsevier B.V. All rights reserved.

Keywords: Adsorbents, Adsorption, Adsorption Isotherm, Carbons, Desulfurization, Dibenzothiophene, Diesel Fuel, Drinking-Water, Equilibrium, Freundlich, Isotherm, Isotherm Equations, Kinetic, Kinetic Models, Kinetics, Langmuir, Mechanism, Model, Models, Pseudo First-Order, Pseudo Second-Order, Removal, Rights, Solution

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Full Text: [2009\App Sur Sci255, 4298.pdf](2009/App%20Sur%20Sci255,%204298.pdf)

Abstract: Spent grain, a main by-product of the brewing industry, is available in large quantities, but its main application has been limited to animal feeding. Nevertheless, in this study, spent grain modified with 1 M NaCl solution as a novel adsorbent has been used for the adsorption of Pb(II) in aqueous solutions. Isotherms, kinetics and thermodynamics of Pb(II) adsorption onto modified spent grain were studied. The equilibrium data were well fitted with Langmuir, Freundlich and Dubinin-Radushkevick (D-R) isotherm models. The kinetics of Pb(II) adsorption followed pseudo-second-order model, using the rate constants of pseudo-second-order model, the activation energy (E-a) of Pb(II) adsorption was determined as 12.33 kJ mol-1 according to the Arrhenius equation. Various thermodynamic parameters such as ΔGads, ΔHads and ΔSads were also calculated. Thermodynamic results indicate that Pb(II) adsorption onto modified spent grain is a spontaneous and endothermic process. Therefore, it can be concluded that modified spent grain as a new effective adsorbent has potential for Pb(II) removal from aqueous solutions. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Pb(II), Adsorption, Isotherms, Kinetics, Thermodynamics, Heavy-Metal Removal, Waste-Water, Agricultural Waste, Activated Carbon, Basic Dye, Equilibrium, Biosorption, Biosorbent, Sorption, Lead

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Full Text: [2009\App Sur Sci255, 5818.pdf](2009/App%20Sur%20Sci255,%205818.pdf)

Abstract: Four kinds of silica-gel supported diethylenetriamine adsorbents with different structures, were prepared by so-called “heterogeneous-direct-amination” (hetero-DA), “homogeneous-direct-amination” (homo-DA), “heterogeneous end-group protection” (hetero-EGP), and “homogeneous end-group protection” (homo-EGP) methods, respectively. The obtained products were named SG-HE-dD, SG-HO-dD, SG-HE-pD and SG-HO-pD, respectively (where SG means silica-gel; HE means heterogeneous, HO means homogeneous, d means direct, p means protected and D means diethylenetriamine). Their structures were characterized by FT-IR, elemental analysis, porous structure analysis and thermogravimetric analysis. The adsorption capabilities of such adsorbents towards Hg(II) were studied and evaluated by static method. SG-HE-pD and SG-HO-pD showed higher performance towards Hg(II) adsorption than corresponding counterparts SG-HE-dD and SG-HO-dD, even though the former two possessed lower contents of diethylenetriamine (DETA). The kinetics data indicated that the adsorption process was governed by the film diffusion and followed pseudo-first-order rate model for SG-HE-dD, SG-HO-dD and SG-HE-pD and pseudo-second-order model for SG-HO-pD. The Langmuir model was applied to fit the experimental equilibrium data for all adsorbents. The end-group protection method exhibited its advantage in preparation of effective adsorbent for metal ions uptake compared to the direct-amination method. (C) 2009 Elsevier B. V. All rights reserved.

Keywords: Adsorption, Chelating Resin, Chemical Modification of Silica-Gel, Dendrimer, Derivatives, Diethylenetriamine, End-Group Protection, Ethylenimine, Heavy-Metal Ions, Heterogeneous Routes, Hg(II), Ligands, Nitrogen, Removal, Separation

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Full Text: [2009\App Sur Sci255, 6107.pdf](2009/App%20Sur%20Sci255,%206107.pdf)

Abstract: The activated carbons (ACs) prepared from cattle manure compost (CMC) with various pore structure and surface chemistry were used to remove phenol and methylene blue (MB) from aqueous solutions. The adsorption equilibrium and kinetics of two organic contaminants onto the ACs were investigated and the schematic models for the adsorptive processes were proposed. The result shows that the removal of functional groups from ACs surface leads to decreasing both rate constants for phenol and MB adsorption. It also causes the decrement of MB adsorption capacity. However, the decrease of surface functional groups was found to result in the increase of phenol adsorption capacity. In our schematic model for adsorptive processes, the presence of acidic functional groups on the surface of carbon is assumed to act as channels for diffusion of adsorbate molecules onto small pores, therefore, promotes the adsorption rate of both phenol and MB. In phenol solution, water molecules firstly adsorb on surface oxygen groups by H-bonding and subsequently form water clusters, which cause partial blockage of the micropores, deduce electrons from the pi-electron system of the carbon basal planes, hence, impede or prevent phenol adsorption. On the contrary, in MB solution, the oxygen groups prefer to combine with MB+ cations than water molecules, which lead to the increase of MB adsorption capacity. (C) 2009 Elsevier B. V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Adsorption-Isotherm, Classification, General Treatment, Kinetics, Mechanism, Methylene Blue, Methylene-Blue, Phenol, Phenol Adsorption, Pore-Size Distribution, Schematic Model, Surface Chemical Characteristics, Waste-Water

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Full Text: [2009\App Sur Sci255, 7542.pdf](2009/App%20Sur%20Sci255,%207542.pdf)

Abstract: The modi. cation of nano-fibriform silica by dimethyldichlorosilane was studied by transmission electron microscopy, X-ray powder diffraction, infrared spectroscopy, Raman spectroscopy, physical N-2 adsorption techniques, differential thermal and thermogravimetric analysis, scanning electron microscopy, and elemental analyzer. The results show that dimethyl silane derivatives have been successfully covalently grafted on nano fibriform silica. The polarity of the modified product decreases with the substitution of -OH groups by siloxyl groups. Therefore, the modified product can be easily dispersed in organic solvent and its compatibility with organic molecules is improved. After modi. cation the pore volume decreases and the ductility greatly increases, indicating that the modified product is of a higher strength than before. The study demonstrates that the modified product can be used as an ideal additive to reinforce the strength of organic materials. Crown Copyright (C) 2009 Published by Elsevier B.V. All rights reserved.

Keywords: Adsorption, Chrysotile, Dimethyldichlorosilane, Modification, Nano-Fibriform, Nano-Fibriform Silica, Natural Chrysotile, Organic Modification, Pore, Silica

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Full Text: [2009\App Sur Sci256, 702.pdf](2009/App%20Sur%20Sci256,%20702.pdf)

Abstract: A synthetic Na-magadiite sample has been modified by organofunctionalization process using synthetic route involved the reaction of 2-mercaptopyrimidine with 3-chloropropyltriethoxysilane. The ability of these materials to remove As(V) from aqueous solution was followed by a series of adsorption isotherms adjusted to the Langmuir equation at room temperature and pH 2.0. The kinetic parameters analyzed by the Lagergren and Elovich models gave a good fit for a pseudo-second-order reaction with k(2) in the 4.9-14.0 mmol (1) min (1) range for M-MPY. The adsorption process was exothermic (ΔH-int = -4.09 to -5.79 kJ mol (1)) accompanied by increase in entropy (ΔSint = 41.29-61.80 J K (1) mol (1)) and Gibbs energy (ΔG = -22.34 to -24.19 kJ mol (1)). The energetic effect caused by arsenic(V) cation adsorption was determined through calorimetric titration at the solid-liquid interface and gave a net thermal effect that enabled the calculation of the exothermic values and the equilibrium constant. (c) 2009 Published by Elsevier B.V.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherms, Adsorption Process, Application, Aqueous Solution, Arsenic, Arsenic Removal, Arsenic(V), As(V), Calculation, Calorimetric Titration, Cation, Cation Removal, Drinking-Water, Elovich, Energy, Entropy, Equilibrium, Exothermic, Heavy-Metal, Interface, Ions, Iron-Oxide, Isotherms, Kinetic, Kinetic Parameters, Langmuir, Langmuir Equation, Media, Models, Modification, Modified, Na-Magadiite, NOV, pH, Pseudo Second Order, Pseudo-Second-Order, Room Temperature, Route, Silica-Gel, Solution, Sorption, Surface, Temperature, Thermal Effect, Thermodynamic, Thermodynamic Properties

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Full Text: [2009\App Sur Sci256, 1347.pdf](2009/App%20Sur%20Sci256,%201347.pdf)

Abstract: In this work, chemically oxidized mesoporous carbon (COMC) with excellent lead adsorption performance was prepared by an acid surface modification method from mesoporous carbon (MC) by wet impregnation method. The structural order and textural properties of the mesoporous materials were studied by XRD, SEM, and nitrogen adsorption. The presence of carboxylic functional groups on the carbon surface was confirmed by FT-IR analysis. Batch adsorption experiments were conducted to study the effect of adsorbent dose, initial concentration and temperature for the removal of Pb(II) from aqueous systems. The adsorption was maximum for the initial pH in the range of 6.5-8.0. The kinetic data were best fitted to the pseudo-second order model. The adsorption of chemically oxidized mesoporous carbon to Pb(II) fits to the Langmuir model. The larger adsorption capacity of chemically oxidized mesoporous carbon for Pb(II) is mainly due to the oxygenous functional groups formed on the surface of COMC which can react with Pb(II) to form salt or complex deposited on the surface of MC. (C) 2009 Elsevier B. V. All rights reserved.

Keywords: Adsorbent, Adsorbent Dose, Adsorption, Adsorption, Adsorption Capacity, Adsorption Performance, Analysis, Batch Adsorption, Black Carbon, Capacity, Carbon, Carboxylic, Chemically Oxidized Mesoporous Carbon, Chromium(VI), Concentration, Data, Experiments, FT-IR, FTIR, FTIR Analysis, Functional Groups, Granular Activated Carbon, Heavy Metal, Impregnation, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Model, Lead, Lead, Low-Cost Adsorbents, Mesoporous, Mesoporous Carbon, Mesoporous Materials, Metal, Metal Ion, Model, Modification, Nitrogen, Ordered Mesoporous Carbons, Pb(II), Performance, pH, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second Order Model, Pseudo-Second-Order, Removal, Rights, Salt, SEM, Sorption, Surface, Surface Modification, Systems, Temperature, Waste-Water, Water, Work, XRD

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Full Text: [2010\App Sur Sci256, 2569.pdf](2010/App%20Sur%20Sci256,%202569.pdf)

Abstract: A regenerated activated carbon used as catalyst support in the synthesis of vinyl acetate has been tested as a low-cost adsorbent for the removal of dyes. After a thorough textural characterization of the regenerated activated carbon, its adsorption isotherms and kinetics were determined using methylene blue as model compound at different initial concentrations. Both Langmuir and Freundlich isotherm models were developed and then compared. It was found that the equilibrium data were best represented by the Langmuir isotherm model. The kinetic data were fitted to pseudo-first-order, pseudosecond-order and intraparticle diffusion models, and it was found that the best fitting corresponded to the pseudo-second-order kinetic model. The results showed that this novel adsorbent had a high adsorption capacity, making it suitable for use in the treatment of methylene blue enriched wastewater. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: 2,4-Dichlorophenol, Acetate, Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Isotherms, Agricultural Waste, Aqueous-Solutions, Basic Dye, Basic Dye, Capacity, Carbon, Catalyst, Cationic Dye, Characterization, Data, Diffusion, Dyes, Equilibrium, Freundlich, Freundlich Isotherm, Intraparticle Diffusion, Isotherm, Isotherm Model, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Low Cost, Low Cost Adsorbent, Low-Cost Adsorbent, Methylene Blue, Model, Models, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Pseudosecond-Order, Regenerated Activated Carbon, Remediation, Removal, Removal of Dyes, Rights, Sorption, Spent Catalyst, Support, Synthesis, Treatment, Wastewater

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Full Text: [2010\App Sur Sci256, 2961.pdf](2010/App%20Sur%20Sci256,%202961.pdf)

Abstract: Akadama mud, consisting mainly of different forms of iron and aluminum oxide minerals, was used for arsenate(V) adsorption from aqueous solutions. The adsorption process fitted the first-order kinetic equation and the Langmuir monolayer model well. The adsorption capacity, estimated by the Langmuir isotherm model, was 5.30 mg/g at 20±0.5°C. The effects of the solution properties (initial concentration of As(V), pH, temperature, and mineralization degree) on As(V) removal were investigated. Various mineralization degrees in underground water were simulated by adjusting the ionic strength of the solution or adding coexisting ions to the contaminated solution. It was found that mineralization of the water significantly influenced the arsenic adsorption. The existence of multivalent metallic cations significantly enhanced the As(V) adsorption ability, whereas competing anions such as fluoride and phosphate greatly decreased the As(V) adsorption. This result suggests that Akadama mud is more suitable for arsenic adsorption in low-level phosphate and fluoride solutions. The loaded Akadama mud could be desorbed at polar pH conditions, especially in acidic conditions, and more than 65% As(V) sorption has been achieved at pH 1. (C) 2009 Elsevier B. V. All rights reserved.

Keywords: Adsorption, Adsorption Capacity, Akadama Mud, Aqueous-Solution, Arsenate Batch Adsorption, Arsenic(V), Contaminated Water, Groundwater, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Isotherms, Mechanism, Remediation, Removal, Sorption, Sorption Kinetics, Synthetic Zeolites, Water, Water Mineralization, Zero-Valent Iron

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Full Text: [2010\App Sur Sci256, 3010.pdf](2010/App%20Sur%20Sci256,%203010.pdf)

Abstract: In this research the influence of conductivity on adsorptive behavior of PM30 ultrafiltration membrane was investigated using BSA solution as the feed. The conductive membrane was prepared from the originally nonconductive membrane by chemical polymerization of pyrrole as the conducting media on the membrane surface. Both Langmuir and Redlich-Peterson isotherms properly describe the quasi-equilibrium adsorption data which are produced using experimental results of flux and rejection. Higher capacity of protein adsorption was achieved using nonconductive in comparison with conductive membrane. Using nonconductive membrane, an excessive feasibility and spontaneity of BSA adsorption was observed based on the greater negative value of Gibbs free energy change (Delta G degrees) which is a criterion for spontaneity of adsorption. Determination of filtration mechanism was conducted for elucidation the dominant adsorption region within the membranes i.e. membrane surface or internal pores. The filtration mechanisms for BSA solution using nonconductive and conductive membranes were surface cake deposition and intermediate (partial) blocking, respectively. First-order-kinetic model versus second-order-kinetic model indicated a superior interpretation of adsorption kinetics for both membranes; however, the required time to reach to the equilibrium for nonconductive membrane was slightly higher. All the distinctions in adsorption behavior of the conductive membrane originate from the repulsive potential field appears on the surface of the membrane during preparation. This electrostatic field acts as a barrier against the passage of the negatively charged proteins. Moreover, the partial coverage of membrane surface and internal pores with poly(pyrrole) may reduce the quantity of the active adsorptive sites on the membrane surface and matrix or presumably deactivates a part of the sites. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Behavior, Adsorption Kinetics, Affinity Membranes, Aqueous-Solution, Barrier, Behavior, BSA, Capacity, Chemical, Comparison, Conductive Membrane, Conductivity, Coverage, Data, Deposition, Energy, Equilibrium, Experimental, Feasibility, Feed, Field, Filtration, Filtration Mechanism, Gibbs Free Energy, Isotherm, Isotherm, Isotherms, Kinetics, Langmuir, Mar, Matrix, Mechanism, Mechanisms, Media, Membrane, Model, Nanofiltration Membrane, Polymerization, Polypyrrole, Potential, Preparation, Protein, Proteins, Redlich-Peterson, Rejection, Removal, Research, Rights, Separation, Solution, Surface, Thermodynamic Analysis, Time, Ultrafiltration, Value

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Full Text: [2010\App Sur Sci256, 3228.pdf](2010/App%20Sur%20Sci256,%203228.pdf)

Abstract: Batch sorption experiments were carried out to remove dyes, methyl orange (MO), orange G (OG) and brilliant red X-3B (X-3B), from their aqueous solutions using a mesoporous silica SBA-3 as an adsorbent. The effect of surfactant template in SBA-3 on the removal of OG, MO and X-3B was investigated. Experiments were carried out to investigate the influence of contact time, initial concentration, pH, and adsorbent dosage on the adsorption performance. The adsorption results of anionic dyes on the uncalcined SBA-3 (noted as SBA-3) were compared with those of the calcined SBA-3 (noted as C-SBA-3). The uncalcined SBA-3 adsorbent has a large adsorption capacity and a strong affinity for the anionic dyes. Langmuir, Freundlich and Temkin isotherms were employed to model the experimental results, from which the Freundlich isotherm exhibited the most appropriate to predict the same. Freundlich isotherm exhibited the most appropriate to predict the experimental results. The kinetic data were also analyzed through pseudo-first-order and pseudo-second-order models. The pseudo-second-order kinetic model well depicted the kinetics of dyes adsorption on mesoporous SBA-3. (C) 2009 Elsevier B. V. All rights reserved.

Keywords: Activated Carbon, Adsorbent, Adsorbent Dosage, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Performance, Anionic Dye, Anionic Dyes, Aqueous Solutions, Aqueous-Solutions, Brilliant Red X-3b, Calcined, Capacity, Concentration, Data, Dyes, Experimental, Experiments, Freundlich, Freundlich Isotherm, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Mar, MCM-41, Mesoporous, Mesoporous Materials, Mesoporous Silica, Methyl Orange, MO, Model, Models, Modified, Nanoporous Silica SBA-3, Orange G, Performance, pH, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Rights, Silica, Solutions, Sorption, Surfactant, Synthetic Dyes, Template, Time, Waste-Water

? Liu, Q.S., Zheng, T., Li, N., Wang, P. and Abulikemu, G. (2010), Modification of bamboo-based activated carbon using microwave radiation and its effects on the adsorption of methylene blue. *Applied Surface Science*, **256** (10), 3309-3315.

Full Text: [2010\App Sur Sci256, 3309.pdf](2010/App%20Sur%20Sci256,%203309.pdf)

Abstract: Modification of bamboo-based activated carbon was carried out in a microwave oven under N-2 atmosphere. The virgin and modified activated carbons were characterized by means of low temperature N2 adsorption, acid-base titration, point of zero charge (pH(pzc)) measurement, FTIR and XPS spectra. A gradual decrease in the surface acidic groups was observed during the modification, while the surface basicity was enhanced to some extent, which gave rise to an increase in the pHpzc value. The species of the functional groups and relative content of various elements and groups were given further analysis using FTIR and XPS spectra. An increase in the micropores was found at the start, and the micropores were then extended into larger ones, resulting in an increase in the pore volume and average pore size. Adsorption studies showed enhanced adsorption of methylene blue on the modified activated carbons, caused mainly by the enlargement of the micropores. Adsorption isotherm fittings revealed that Langmuir and Freundlich models were applicable for the virgin and modified activated carbons, respectively. Kinetic studies exhibited faster adsorption rate of methylene blue on the modified activated carbons, and the pseudo-second-order model fitted well for all of the activated carbons. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Acid, Activated Carbon, Activated Carbons, Adsorption, Adsorption Isotherm, Adsorption Rate, Analysis, Aqueous-Solutions, Atmosphere, Carbon, Charge, Chlorophenols, Content, Enlargement, Fibers, Freundlich, FTIR, FTIR and XPS Spectra, Functional Groups, Heterogeneity, Isotherm, Kinetic, Kinetic Studies, Langmuir, Low Temperature, Mar, Measurement, Methylene Blue, Microwave, Model, Models, Modification, Modified, N2, N2 Adsorption, Phenol, pHpzc, Point of Zero Charge, Pore Volume, Precursors, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Radiation, Removal, Rights, Size, Species, Surface, Surface-Chemistry, Temperature, Thermal Regeneration, Value, Volume, XPS

? Arasteh, R., Masoumi, M., Rashidi, A.M., Moradi, L., Samimi, V. and Mostafavi, S.T. (2010), Adsorption of 2-nitrophenol by multi-wall carbon nanotubes from aqueous solutions. *Applied Surface Science*, **256** (14), 4447-4455.

Full Text: [2010\App Sur Sci256, 4447.pdf](2010/App%20Sur%20Sci256,%204447.pdf)

Abstract: Adsorption of 2-nitrophenol in aqueous phase on multi-wall carbon nanotubes (MWNTs) and functionalized multi-wall carbon nanotubes having covalent attachments of carboxylic groups (MWNTs-COOH) has been considered. Adsorption behavior of 2-nitrophenol onto carbon nanotubes was studied by varying the parameters such as agitation time, 2-nitrophenol concentration and pH. The presence of surface functional groups affected the adsorption capacity of MWNTs for this removal of 2-nitrophenol. Kinetic studies were performed and pseudo-second-order kinetic model successfully represented the kinetic data. The Freundlich, Langmuir and Tempkin adsorption models were used for the mathematical description of adsorption equilibrium and it was found that the experimental data fitted very well to the Langmuir model. However, for MWNTs-COOH, Tempkin model may be recommended because of the strong adsorbent-adsorbate interactions arising from the functional groups present on the surface of MWNTs. The results of the study show that the carbon nanotubes can be used as potential adsorbent for phenolic derivate in water/wastewater. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: 1,2-Dichlorobenzene, 2-Nitrophenol, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Agitation, Aqueous Phase, Aqueous Solutions, Behavior, Capacity, Carbon, Carbon Nanotubes, Carboxylic, Chlorophenols, Concentration, Data, Equilibrium, Experimental, Freundlich, Functional Groups, Granular Activated Carbon, Isotherms, Kinetic, Kinetic Model, Kinetic Studies, Kinetics, Kinetics, Langmuir, Langmuir Model, Model, Models, Mwnts, Nanotubes, Part I, pH, Phenolic-Compounds, Potential, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Rights, Solutions, Surface, Surface Functional Groups, Surface-Properties, Time, Water

? Marczewski, A.W. (2010), Application of mixed order rate equations to adsorption of methylene blue on mesoporous carbons. *Applied Surface Science*, **256** (17), 5145-5152.

Full Text: [2010\App Sur Sci256, 5145.pdf](2010/App%20Sur%20Sci256,%205145.pdf)

Abstract: Static and kinetic studies on adsorption of Methylene blue on four synthesized mesoporous carbons are presented. The carbon properties are analyzed by means of nitrogen adsorption. The static experiments are analyzed by means of Langmuir-Freundlich and Freundlich isotherms. The Lagergren, pseudo-second-order and mixed order as well as the multi-exponent equations are used in analysis of kinetic equilibria. The properties of rate equations are compared and analyzed. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Kinetics, Analysis, Aqueous-Solutions, Carbon, Copolymer, Dye, Equilibria, Equilibrium, Experiments, Freundlich, Isotherms, Kinetic, Kinetic Studies, Kinetic-Models, Langmuir-Freundlich, Mesoporous, Mesoporous Carbon, Methylene Blue, Nitrogen, Pseudo Second Order, Pseudo-Second-Order, Rate Equations, Rights, Solid, Solution Interfaces, Solute Adsorption, Sorption, Systems

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Full Text: [2010\App Sur Sci256, 5153.pdf](2010/App%20Sur%20Sci256,%205153.pdf)

Abstract: It has been shown that most of the previously reported empirical rate equations for kinetics of adsorption at the solid/solution interface show high relative errors at the initial times of adsorption. In the present work we made a modification onto pseudo-first-order and pseudo-second-order models and presented a new empirical rate equation, called the modified pseudo-n-order (MPnO) model. The results of fitting to the experimental data show that the MPnO model has low relative errors in the whole range of adsorption time. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Kinetics, Carbon, Data, Empirical Rate Equation, Equilibrium, Errors, Experimental, Interface, Ions, Kinetics, Kinetics of Adsorption, Model, Models, Modification, Modified, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Removal, Rights, Solute Adsorption, Sorption, Statistical Rate Theory, Work

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Full Text: [2010\App Sur Sci256, 5157.pdf](2010/App%20Sur%20Sci256,%205157.pdf)

Abstract: The adsorption kinetics at the solid/solution interfaces has been described by using the kinetic model based on accepting the existence of the concentration gradient in the region of bulk solution close to the solid surface (external film-diffusion model). This model has also been adopted to explain some behaviours observed in the real adsorption systems. Simultaneously, the pseudo-first order (Lagergren) equation can be derived applying this model. The results indicate that the necessary condition to state that the “diffusion across the liquid film” mechanism is involved in controlling the rate of adsorption process is the linearity of the initial parts of kinetic isotherms plotted as the amount adsorbed vs. the time. The two methods have been proposed to distinguish between this mechanism and the classical Langmuir kinetics. The results presented here might be useful in identifying if the concentration gradient in the bulk solution influences the overall adsorption rate. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Kinetics, Adsorption Rate, Aqueous-Solution, Biosorption Isotherms, Concentration, Equilibrium, External Film Diffusion, Film Diffusion, Interfaces, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Linked Chitosan Beads, Liquid, Mass-Transfer, Mechanism, Methods, Model, Pseudo First Order, Pseudo-First Order, Pseudo-First-Order, Reactive Dye, Rights, Solute Adsorption, Solution, Sorption, Sorption, State, Statistical Rate Theory, Surface, Systems, Thermodynamics

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Full Text: [2010\App Sur Sci256, 5164.pdf](2010/App%20Sur%20Sci256,%205164.pdf)

Abstract: Two carbonaceous materials were synthesized by using the method of impregnation of mesoporous silicas obtained by applying the Pluronic copolymers as pore-creating agents. The isotherms of adsorption of methylene blue and methyl orange from aqueous solutions were measured by the static method. The profiles of adsorbate concentration change in time were obtained from the UV-Vis spectra. The adsorption isotherms and kinetic dependence were discussed in the terms of theory of adsorption on heterogeneous surfaces. (C) 2009 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Adsorption Equilibria And Kinetics, Adsorption Isotherms, Aqueous Solution, Aqueous Solutions, Carbonaceous Materials, Concentration, Dye Adsorption, Equilibria, Impregnation, Isotherms, Kinetic, Kinetics, Mesoporous, Mesoporous Carbons, Methyl Orange, Methylene Blue, Models, Organic Solutes, Profiles, Removal, Rights, Silicas, Simultaneous DTA-TG, Solution, Solutions, Sorption, Surface-Chemistry, Surfaces, Systems, Theory

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Full Text: [2010\App Sur Sci256, 5171.pdf](2010/App%20Sur%20Sci256,%205171.pdf)

Abstract: The removal of a compound with therapeutic activity (paracetamol) from aqueous solutions using chemically modified activated carbons has been investigated. The chemical nature of the activated carbon material was modified by wet oxidation, so as to study the effect of the carbon surface chemistry and composition on the removal of paracetamol. The surface heterogeneity of the carbon created upon oxidation was found to be a determinant in the adsorption capability of the modified adsorbents, as well as in the rate of paracetamol removal. The experimental kinetic data were fitted to the pseudo-second order and intraparticle diffusion models. The parameters obtained were linked to the textural and chemical features of the activated carbons. After oxidation the wettability of the carbon is enhanced, which favors the transfer of paracetamol molecules to the carbon pores (smaller boundary layer thickness). At the same time the overall adsorption rate and removal efficiency are reduced in the oxidized carbon due to the competitive effect of water molecules. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Activated Carbons, Adsorbents, Adsorption, Adsorption Kinetics, Adsorption Rate, Aqueous Solution, Aqueous Solutions, Boundary Layer, Carbon, Chemical, Chemistry, Competitive, Composition, Data, Diffusion, Efficiency, Experimental, Heterogeneity, Ibuprofen, Intraparticle Diffusion, Kinetic, Kinetics, Models, Modified, Oxidation, Paracetamol, Pharmaceuticals, Pharmaceuticals, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Removal Efficiency, Rights, Solution, Solutions, Surface, Surface Chemistry, Surface Heterogeneity, Therapeutic, Water, Wet Oxidation

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Full Text: [2010\App Sur Sci256, 5254.pdf](2010/App%20Sur%20Sci256,%205254.pdf)

Abstract: In this work we have investigated the role of porous carbon material used as a photocatalyst and a catalyst support in the carbon/titania composite in the photodegradation of phenol, and compared the results to those of bare titanium oxide. The immobilization of titania on an activated carbon provoked acceleration of the degradation rate under UV irradiation, which is likely to be attributed to the porosity of the carbon support. The identification of the degradation intermediates detected in the solution showed that the presence of the carbon support affects the nature of phenol degradation mechanism through the formation of different intermediates. Additionally, phenol photodecomposition rate over the carbon support outperformed that attained in the carbon/titania composite, suggesting an important self-photoactivity of the carbon support. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorbents, Adsorption, Aqueous-Solution, Carbon, Catalyst, Composite, Composite Photocatalyst, Degradation, Identification, Immobilization, Irradiation, Mechanism, Oxidation, Oxide, Phase, Phenol, Photocatalytic, Photodegradation, Porosity, Porous Carbon, Removal, Rights, Role, Solution, Support, TiO2, Titanium, Titanium Oxide, UV, Work

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Full Text: [2010\App Sur Sci256, 5422.pdf](2010/App%20Sur%20Sci256,%205422.pdf)

Abstract: The nitrogen-heterocyclic compound 8-hydroxyquinoline (8HQ) is one of the components of coal tar and has a wide variety of uses in industry. Because of its toxicity for aquatic organisms and harmful effects for human health, the removal of 8HQ from aqueous solutions by adsorption onto natural bentonite was investigated in the present work. The experimental results show that the optimum pH value of 2.5 is favourable for the 8HQ adsorption. The experimental data were fitted well with the pseudo-second-order kinetic and Langmuir adsorption isotherm models at all studied temperatures. The maximum adsorption capacity obtained from the Langmuir isotherm model at 20ºC was 120.6 mg g (1). The calculated thermodynamic results such as Δ*G*º (-24.3 kJ mol (1)) and Δ*H*º (-9.56 kJ mol (1)) indicate that the adsorption process is spontaneous and exothermic in nature. Solid phase extraction of 8HQ was also performed. The X-ray diffractometry (XRD), Fourier Transform Infrared (FTIR) and thermogravimetric (TG) analyses were carried out in order to confirm the 8HQ adsorption onto bentonite. According to the obtained results, natural bentonite can be a reusable and effective adsorbent for the removal of 8HQ. (C) 2010 Published by Elsevier B.V.

Keywords: 8-Hydroxyquinoline, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Isotherm Models, Analyses, Aquatic Organisms, Aqueous Solutions, Bentonite, Blue, Capacity, Coal, Copper(II) Ions, Data, Dye, Exothermic, Experimental, Extraction, Fly-Ash, FTIR, Health, Human, Human Health, Isotherm, Isotherm Model, Kinetic, Kinetic-Models, Kinetics, Langmuir, Langmuir Adsorption Isotherm, Langmuir Isotherm, Langmuir Isotherm Model, Model, Models, Natural, Natural Bentonite, PAHs, pH, pH Value, Pseudo Second Order, Pseudo-Second-Order, Removal, Soils, Solid Phase Extraction, Solutions, Sorption, Thermodynamic, Thermodynamics, Toxicity, Value, Work, X-Ray, XRD

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Full Text: [2010\App Sur Sci256, 5439.pdf](2010/App%20Sur%20Sci256,%205439.pdf)

Abstract: The aim of this study is to evaluate adsorption kinetics, isotherms and thermodynamic parameters of Reactive Blue 19 (RB19) onto modified bentonite from aqueous solutions. The effects of pH, contact time, initial dye concentration and temperature were investigated in the experimentally. Natural bentonite was modified by using 1,6-diamino hexane (DAH) as a modifying agent. The characterization of modified bentonite (DAH-bentonite) was accomplished by using FTIR, TGA, BET and elemental analysis techniques. The optimum pH value for the adsorption experiments was found to be 1.5 and all the experiments were carried out at this pH value. The pseudo-second-order kinetic model agrees very well with the experimental results. Equilibrium data were also fitted well to the Langmuir isotherm model in the studied concentration range of RB19 at 20ºC. The results indicate that DAH-modified bentonite is a suitable adsorbent for the adsorption of textile dyes. (C) 2010 Elsevier B. V. All rights reserved.

Keywords: Acid-Blue-193, Adsorbent, Adsorption, Adsorption Kinetics, Analysis, Aqueous Solutions, Behavior, Bentonite, BET, Characterization, Clay, Concentration, Data, Dye, Dyes, Equilibrium, Experimental, Experiments, FTIR, Isotherm, Isotherm Model, Isotherms, Kinetic, Kinetic Model, Kinetic-Models, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Model, Modified, Modified Bentonite, Montmorillonite, Natural Bentonite, Organobentonite, pH, pH Value, Pore, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, RB19, Removal, Rights, Sepiolite, Solutions, Sorption, Surfactant, Techniques, Temperature, Textile Dye, TGA, Thermodynamic, Thermodynamic Parameters, Value, Zeolite

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Full Text: [2010\App Sur Sci256, 5911.pdf](2010/App%20Sur%20Sci256,%205911.pdf)

Abstract: Modified palygorskite with 3-aminopropyltriethoxysilane (KH550) and N-(2-aminoethyl)-3-aminopropyltrimethoxysilane (KH792) were used as adsorbent supports for adsorption of 12-phosphotungstic acid (H3PW12O40, HPW). The effect of some factors, such as adsorbent dosage, contact time, initial HPW concentration and temperature, was investigated. The experimental data were well fitted with the pseudo-second-order kinetic model and the Langmuir adsorption isotherm model at all studied temperatures. The physicochemical properties of the solids were characterized by using Fourier transform infrared spectroscopy (FTIR), X-ray photoelectron spectroscopy (XPS), thermogravimetric analysis-simultaneous differential thermal analysis (TGA-SDTA), and diffuse reflectance infrared Fourier transform (DRIFT) spectroscopy analysis techniques. The characteristic results indicated that silylated-Pa was a suitable support for adsorption of HPW; and HPW was finely and effectively distributed on silylated-Pa and retained partly strong Bronsted acidity. (C) 2010 Elsevier B. V. All rights reserved.

Keywords: Acid, Adsorbent, Adsorption, Adsorption, Adsorption Isotherm, Catalytic-Activity, Clay, Ethanol, Foreign Ions, Heteropolyacid, Isotherm, Isotherms, Kinetic, Langmuir, Ligand Systems, Modification, Palygorskite, Silica Surface, Sorption, Temperature

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Full Text: [2010\App Sur Sci256, 7246.pdf](2010/App%20Sur%20Sci256,%207246.pdf)

Abstract: Tetrabromobisphenol A (TBBPA) is widely used as a flame retardant and is relatively persistent in the environment. This study reports the sorption kinetics, equilibrium and thermodynamics of TBBPA on multiwalled carbon nanotubes (MWCNTs). The equilibrium sorption capacity has been significantly improved by increasing the initial TBBPA concentration and contact time. In alkaline conditions and at high temperatures, a large reduction of TBBPA uptake was observed. The equilibrium between TBBPA and MWCNTs was achieved in approximately 60 min with removal of 96% of the TBBPA. The sorption kinetics were well described by a pseudo-second-order rate model, while both Langmuir and Freundlich models described the sorption isotherms well at different temperatures. Thermodynamic parameters suggested that the sorption of TBBPA is exothermic and spontaneous at the temperatures studied. (C) 2010 Elsevier B. V. All rights reserved.

Keywords: Activated Carbon, Adsorption, Aqueous-Solutions, Batch System, Capacity, Carbon, Carbon Nanotube, Carbon Nanotubes, Concentration, Environment, Equilibrium, Exothermic, Flame Retardants, Flame Retardants, Freundlich, Isotherms, Kinetics, Langmuir, Liquid-Chromatography, Model, Models, Multiwalled Carbon Nanotubes, MWCNTs, Nanotubes, Preconcentration, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Rate, Reduction, Removal, Rights, Solid-Phase Extraction, Solution pH, Sorption, Sorption Capacity, Sorption Isotherms, Sorption Kinetics, Tetrabromobisphenol A, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Uptake, Water Samples

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Full Text: [2010\App Sur Sci256, 7289.pdf](2010/App%20Sur%20Sci256,%207289.pdf)

Abstract: Kinetics of adsorption of single gases and their binary mixture on an energetically homogeneous surface are studied theoretically using the Statistical Rate Theory (SRT) of interfacial transport. Additionally, the influence of intermolecular interactions on the rate of adsorption is modeled using the Regular Adsorbed Solution Theory. The theoretical results are classified and assigned to different types of experimental conditions under which the changes of the adsorbate concentration near the adsorbing surface are considerable or they are negligible. Predictions of the theory are verified using adsorption data measured in real systems. (C) 2010 Elsevier B. V. All rights reserved.

Keywords: Adsorption, Approach, Aqueous-Solutions, Bubble Evolution, Changes, Competitive Adsorption, Concentration, Data, Experimental, Heterogeneous Solid-Surfaces, Interaction, Interfacial Transport, Kinetics, Liquid, Mixed-Gas Adsorption, Rights, Solid, Solution Interfaces, Solute Adsorption, Sorption, Statistical Rate Theory, Surface, Systems, Theoretical Development, Theory, Transport

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Full Text: [2010\App Sur Sci257, 769.pdf](2010/App%20Sur%20Sci257,%20769.pdf)

Abstract: Aluminum hydroxypolycation and cetyltrimethylammonium bromide (CTMAB) were chosen to synthesize inorganic-organic pillared montmorillonite. Three different methods were employed for the intercalation. The characteristics of natural and modified montmorillonite were determined with Xray diffraction (XRD), Fourier transform infrared spectrum (FTIR), X-ray photoelectron spectrum (XPS), and zeta potential. It was found that aluminum hydroxypolycation and CTMAB had either entered the interlayer or sorbed on the external surface of the clay. Different intercalation orders can result in different structures. Batch adsorption of hexavalent chromium (Cr6+) onto modified montmorillonite was also investigated. The experimental data revealed that if aluminum hydroxypolycation was intercalated before CTMAB, the adsorption capacity was better than that of intercalated simultaneously or CTMAB pre-intercalated. The pH of the solution and environmental temperature had significant influences on the adsorption of Cr6+. The optimal pH for the removal was about 4, and the temperature of 298K was best suitable. All adsorption processes were rapid during the first 5 min and reached equilibrium in 20 min. The adsorption kinetics can be described quite well by pseudo-second-order model. The adsorption rates of ACM, CAM and ACCOM were 3.814, 0.915, and 3.143 mg/g/min, respectively. The adsorption capacities of Cr6+ at 298K on ACM, CAM, and ACCOM inferred from the Langmuir model were 11.970, 6.541, and 9.090 mg/g, respectively. The adsorption of Cr6+ on modified montmorillonite was mainly induced by the surface charge and the complexation reaction between CTMA+ and hexavalent chromium species at the edge of the clay particle. (C) 2010 Elsevier B. V. All rights reserved.

Keywords: Adsorption, Adsorption Capacities, Adsorption Capacity, Adsorption Kinetics, Aluminum, Aqueous-Solutions, Batch Adsorption, Bentonite, Bromide, Capacity, Characteristics, Charge, Chromate, Chromium, Clay, Complexation, Cr6+, Data, Environmental, Equilibrium, Experimental, First, FTIR, Hexavalent Chromium, Hydroxyaluminum, Induced, Intercalation Order, Kinetics, Langmuir, Langmuir Model, Methods, Model, Modified, Modified Montmorillonite, Montmorillonite, Natural, NOV, pH, Potential, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Rates, Removal, Rights, Solution, Species, Surface, Surface Charge, Temperature, VI, X-Ray, XPS, XRD, Zeta Potential

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Full Text: [2010\App Sur Sci257, 1524.pdf](2010/App%20Sur%20Sci257,%201524.pdf)

Abstract: The natural zeolite tuff (clinoptilolite) from a Serbian deposit has been studied as adsorbent for Ni(II) ions from aqueous solutions. Its sorption capacity at 298K varies from 1.9mg Nig-1 (for the initial solution concentration of 100mg Nidm-3) to 3.8mg Nig-1 (for C-0 = 600 mgNidm-3) and it increases 3 times at 338 K. The sorption is best described by the Sips isotherm model. The sorption kinetics follows the pseudo-second-order model, the activation energies being 7.44, 5.86, 6.62 and 6.63 kJ mol-1 for C-0 = 100, 200, 300 and 400mg Nidm-3, respectively. The sorption involves a film diffusion, an intra-particle diffusion, and a chemical cation-exchange between the Na+ ions of clinoptilolite and the Ni2+ ions. The sorption is endothermic (ΔHº being 37.9, 33.4, 30.0, 27.7 and 24.3 kJ mol-1 for C-0 = 100, 200, 300, 400 and 600mg Nidm-3, respectively) and spontaneous in the 298-338K temperature range. Thermal treatment of the Ni(II)-loaded clinoptilolite results in the formation of spherical nano-NiO particles of approx. 5 nm in diameter which are randomly dispersed in the clinoptilolite lattice. (c) 2010 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Activation, Adsorbent, Adsorption, Aqueous Solutions, Biosorbents, Capacity, Cation Exchange, Chemical, Clinoptilolite, Concentration, Diffusion, Endothermic, Equilibrium, Film Diffusion, Fly-Ash, Heavy-Metal Ions, Intra-Particle Diffusion, Intraparticle Diffusion, Ion-Exchange, Ions, Isotherm, Isotherm Model, Kaolinite, Kinetics, Low-Cost Adsorbents, Model, Na+, Nano-Oxide, Natural, Natural Zeolite, Ni(II), Ni(II) Ions, Ni2+, Nickel Removal, Nickel(II), Nickel(II) Ions, Particles, Preparation, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Removal, Rights, Solution, Solutions, Sorption, Sorption Capacity, Sorption Kinetics, Temperature, Thermal Treatment, Treatment, Waste-Water Treatment, Zeolite

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Full Text: [2010\App Sur Sci257, 1628.pdf](2010/App%20Sur%20Sci257,%201628.pdf)

Abstract: This study investigates the potential use of bael shell carbon (BSC) as an adsorbent for the removal of congo red (CR) dye from aqueous solution. The effect of various operational parameters such as contact time, temperature, pH, and dye concentration were studied. The adsorption kinetics was modeled by first-order reversible kinetics, pseudo-first-order kinetics, and pseudo-second-order kinetics. The dye uptake process obeyed the pseudo-second-order kinetic expression at pH 5.7, 7 and 8 whereas the pseudo-first-order kinetic model was fitted well at pH 9. Langmuir, Freundlich and Temkin adsorption models were applied to fit adsorption equilibrium data. The best-fitted data was obtained with the Freundlich model. Thermodynamic study showed that adsorption of CR onto BSC was endothermic in nature and favorable with the positive ΔHº value of 13.613 kJ/mol. (c) 2010 Elsevier B.V. All rights reserved.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Equilibrium, Adsorption Kinetics, Adsorption Mechanism, Aqueous Solution, Biomass, Biosorption, Carbon, Coir, Concentration, Congo Red, Cr, Data, Dye, Endothermic, Equilibrium, Expression, First Order, Fly-Ash, Freundlich, Freundlich Model, Isotherm, Kinetic, Kinetic Model, Kinetics, Langmuir, Model, Models, Montmorillonite, pH, Potential, Pseudo First Order, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-First-Order, Pseudo-First-Order Kinetics, Pseudo-Second-Order, Pseudo-Second-Order Kinetics, Removal, Rights, Solution, Temkin, Temperature, Thermodynamic, Thermodynamic Study, Uptake, Value, Waste, Water

? Chang, Y.P., Ren, C.L., Yang, Q., Zhang, Z.Y., Dong, L.J., Chen, X.G. and Xue, D.S. (2011), Preparation and characterization of hexadecyl functionalized magnetic silica nanoparticles and its application in Rhodamine 6G removal. *Applied Surface Science*, **257** (20), 8610-8616.

Full Text: [2011\App Sur Sci257, 8610.pdf](2011/App%20Sur%20Sci257,%208610.pdf)

Abstract: In this paper, a new adsorbent, hexadecyl functionalized magnetic silica nanoparticles (C(16)/SiO(2)-Fe(3)O(4) NPs), was prepared by a facile method. The final product was characterized by X-ray diffractometer, transmission electron microscope, Fourier transform infrared spectrometer and vibration sample magnetometer. The preparation and adsorption conditions of the adsorbent were optimized. The adsorbent prepared maintaining volume ratio of tetraethylorthosilicate to hexadecyltrimethoxysilane at 1:0.5 and their total volume at 1100 mu L exhibited high adsorption capacity. The optimum pH value for the adsorption experiments was 11.00. The adsorption behavior of Rhodamine 6G onto C(16)/SiO(2)-Fe(3)O(4) NPs obeyed pseudo-second-order kinetic model and Langmuir isotherm. Thermodynamic data indicated that the adsorption process was spontaneous and exothermic. The adsorption capacity of the adsorbent could reach to 35.6 mg g(-1), owing to the hydrophobic attraction and the enhanced electrostatic attraction. The saturation magnetization of the magnetic adsorbent was 35 emu g(-1), which ensured the magnetic separation after adsorption. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Basic-Dyes, Cationic Dyes, Decolorization, Dyes Removal, Electrostatic Attraction, Facile Synthesis, Ferrite Microspheres, Hexadecyl Functionalized Magnetic Silica Nanoparticles, Hydrophobic Attraction, Kinetics, Model, Montmorillonite, Nanocomposite, Pseudo-Second-Order, Waste-Water

? Huang, S.S., Shao, J.Q., Gao, L.F., Qi, Y.Z. and Ye, L. (2011), Adsorption of cathepsin B-sensitive peptide conjugated DOX on nanodiamonds. *Applied Surface Science*, **257** (20), 8617-8622.

Full Text: [2011\App Sur Sci257, 8617.pdf](2011/App%20Sur%20Sci257,%208617.pdf)

Abstract: Drug delivery mediated by nanodiamonds (NDs) has shown great promise in controlled drug release field. In present study, dipeptide (Phe-Lys) conjugated antitumor drug doxorubicin hydrochloride (DOX) with self-immolative p-aminobenzylcarbonyl (PABC) spacer was non-covalently bound to carboxylated NDs via the electrostatic interactions. HIV-1 trans-activating transcriptor peptide (TAT) was additionally integrated to this ND-based delivery system in order to enhance the transmembrane efficiency. Fourier transforms infrared spectroscopy (FTIR), transmission electron microscopy (TEM) and zeta potentials were applied to characterize the DOX and TAT loaded ND delivery platform. The adsorption equilibrium, kinetics and thermodynamics for the adsorption of peptide conjugated DOX onto NDs were investigated. It was found that the adsorption fitted well with the Freundlich model and conformed to pseudo-second order kinetics. It also showed that the adsorption was a spontaneous and exothermic process. Therefore, our work offered a facile way to formulate a ND-based drug delivery platform with multifunctionality in a layer by layer adsorption fashion. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Adsorption, Adsorption Kinetics, Adsorption Thermodynamics, Aqueous-Solution, Delivery, Diamond Nanoparticles, Dox, Kinetics, Linkers, Model, Nanodiamonds, Oxidative Stress, Pseudo-Second Order, Pseudo-Second-Order, Sorption, Tat

? Li, Y.H., Du, Q.J., Liu, T.H., Qi, Y., Zhang, P., Wang, Z.H. and Xia, Y.Z. (2011), Preparation of activated carbon from *Enteromorpha prolifera* and its use on cationic red X-GRL removal. *Applied Surface Science*, **257** (24), 10621-10627.

Full Text: [2011\App Sur Sci257, 10621.pdf](2011/App%20Sur%20Sci257,%2010621.pdf)

Abstract: Enteromorpha prolifera was pyrolyzed to prepare activated carbon using chemical activation by zinc chloride. The effect of activation parameters such as activation temperature, weight ratio (Enteromorpha prolifera to ZnCl2), and activation time was investigated. The BET results showed that the surface area and pore volume of activated carbons were achieved as high as 1722 m2/g and 1.11 cm(3)/g, respectively, in the optimal activation conditions. Batch adsorption studies were carried out to study the adsorption properties of cationic red X-GRL onto activated carbon by varying the parameters like initial solution pH, contact time, and temperature. The kinetic studies showed that the adsorption data followed a pseudo second-order model. The isotherm analysis indicated that the adsorption data could be represented by the Langmuir isotherm model. The Langmuir monolayer adsorption capacity of cationic red X-GRL was estimated as 263.16 mg/g at pH 6.0. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Acid Dye Adsorption, Activated Carbon, Adsorption, Basic Dye, Batch, Batch Adsorption, Cationic Red X-Grl, Cattle-Manure-Compost, Chloride, Dilute Aqueous-Solutions, Enteromorpha, Enteromorpha Prolifera, Isotherm, Kinetic, Langmuir, Langmuir Isotherm, Malachite Green, Metal-Ions, Methylene-Blue, pH, Pseudo Second Order, Reactive Dyes, Removal, Temperature, Thermodynamics, Waste-Water, Zinc, Zinc-Chloride Activation

? Zhu, H.Y., Jiang, R., Fu, Y.Q., Jiang, J.H., Xiao, L. and Zeng, G.M. (2011), Preparation, characterization and dye adsorption properties of γ-Fe2O3/SiO2/chitosan composite. *Applied Surface Science*, **258** (4), 1337-1344.

Full Text: [2011\App Sur Sci258, 1337.pdf](2011/App%20Sur%20Sci258,%201337.pdf)

Abstract: A γ-Fe2O3/SiO2/chitosan composite was prepared by water-in-oil emulsification, and characterized by X-ray diffraction (XRD), scanning electron microscopy (SEM). Effects of various factors, including adsorbent dosage, initial dye concentration, solution pH, and competing anions, on the adsorption of methyl orange from aqueous solutions by the resulting composite were studied by batch adsorption experiments. The adsorption kinetics was found to follow the pseudo-second-order kinetic model, and intraparticle diffusion was related to the adsorption, but not as a sole rate-controlling step. The equilibrium adsorption data were well described by the Freundlich isotherm model. Evaluation of the thermodynamic parameters Δ*G*°, Δ*H*°, and Δ*S*° revealed that the adsorption process was naturally feasible, spontaneous, and exothermic. The composite was proven to be efficient, suitable and promising for the removal of methyl orange from aqueous solutions since it has a relatively higher adsorption capacity than other low-cost adsorbents. (C) 2011 Elsevier B.V. All rights reserved.

Keywords: Adsorbent, Adsorption, Aqueous-Solution, Basic-Dyes, Chitosan, Freundlich, γ-Fe2O3, γ-Fe2O3 Nanoparticles, Inorganic Salts, Isotherm, Kinetic, Kinetics, Liquid-Phase, Methyl Orange, Methyl-Orange, Mixed-Oxide, Nanosized γ-Fe2O3, Organic-Matter, pH, Preparation, Removal, SiO2

# Title: Applied Thermal Engineering

Full Journal Title: [Applied Thermal Engineering](http://www.sciencedirect.com/science?_ob=PublicationURL&_cdi=5687&_pubType=J&_auth=y&_acct=C000053193&_version=1&_urlVersion=0&_userid=1495547&md5=cf4b128bacba2880bdc5c08c1e5867b3)

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Journal Country/Territory:

Language:

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Subject Categories:

: Impact Factor

? Karacan, F., Ozden, U. and Karacan, S. (2007), Optimization of manufacturing conditions for activated carbon from Turkish lignite by chemical activation using response surface methodology. *Applied Thermal Engineering*, **27** (7), 1212-1218.

Full Text: [2007\App The Eng27, 1212.pdf](2007/App%20The%20Eng27,%201212.pdf)

Abstract: The purpose of this research is to obtain optimal processing conditions for activated carbon from lignite by chemical activation with K2CO3 using response surface methodology (RSM). The activated carbons produced were characterized by carbon yield (%), BET surface area, porosity development (total pore volume and micropore fraction). RSM based on a five-variable central composite rotatable design was used to determine the effect of chemical ratio (ranging from 0 to 4) and activation temperature (ranging from 500°C to 900°C) on the responses levels. Each response has been described by a second order model that was found to be appropriate to predict most of the responses in every experimental region. The most influential factor on each experimental design response have been identified from the analysis of variance (ANOVA). The optimum conditions for manufacturing of activated carbon from Turkish lignite, which were based on response surface and contour plots, were found as follows: chemical ratio of 2.05 and carbonization temperature of 800°C. (C) 2006 Elsevier Ltd. All rights reserved.

Keywords: Activated Carbon, Adsorption, Air, Analysis, Carbon, Carbonization, Chemical, Chemical Activation, Coal, Composite, Design, Development, Experimental Design, Levels, Lignite, Manufacturing, Methodology, Model, Optimization, Pore Volume, Porosity, Predict, Processing, Research, Response Surface Methodology, Steam, Surface, Surface Area, Temperature, Waste, Yield

# Title: Applied Water Science

Full Journal Title: Applied Water Science

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Publisher Address:

Subject Categories:

: Impact Factor

# Title: Aquaculture

Full Journal Title: [Aquaculture](http://sdos.ejournal.ascc.net/cgi-bin/sciserv.pl?collection=journals&journal=00448486), [Aquaculture](http://sciencejournals.info/Aquaculture.html)

ISO Abbreviated Title: Aquaculture

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ISSN: 0044-8486

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Journal Country/Territory: Netherlands

Language: Multi-Language

Publisher: Elsevier Science BV

Publisher Address: PO Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Fisheries: Impact Factor 1.343, / (2000); Impact Factor, 6/36 (2001)

Marine & Freshwater Biology: Impact Factor 1.343, / (2000); Impact Factor, 12/71 (2001)

Aitcheson, S.J., Arnett, J., Murray, K.R. and Zhang, J. (2001), Removal of aquaculture therapeutants by carbon adsorption 1: Equilibrium adsorption behaviour of single components. *Aquaculture*, **183** (3-4), 269-284.

Full Text: [A\Aquaculture183, 269.pdf](A/Aquaculture183,%20269.pdf)

Abstract: This paper presents data on batch equilibrium adsorption onto the coal-based activated carbon 207EA (Sutcliffe Speakman) of Malachite Green, formalin, Chloramine-T and Oxytetracycline. These substances are widely used in aquaculture to control fish parasites and disease, but few data were previously available on their adsorption behaviour. In addition, equilibrium adsorption data for carbon 207EA are presented for the mixed dissolved organic carbon (DOC) typically present in the water where fish are reared, as well as for D-glucose. Together, these data permit the design of carbon adsorption treatment units that will remove both therapeutants and DOC without causing stress to the fish stock. It further removes the need for land-based recycle systems to discharge these mixed effluents untreated to the environment. (C) 2000 Elsevier Science B.V. All rights reserved.

Keywords: Carbon-Adsorption, Aquaculture, Chloramine-T, Formalin, Malachite Green, Oxytetracycline, Malachite Green, Fish Farm, Rainbow-Trout, Oxytetracycline, Sediments, Bacteria, Culture, Water, Fate

Aitcheson, S.J., Arnett, J., Murray, K.R. and Zhang, J. (2001), Removal of aquaculture therapeutants by carbon adsorption 2: Multicomponent adsorption and the equilibrium behaviour of mixtures. *Aquaculture*, **192** (2-4), 249-264.

Full Text: [A\Aquaculture192, 249.pdf](A/Aquaculture192,%20249.pdf)

Abstract: This paper presents experimental data on the batch equilibrium adsorption behaviour of binary and ternary mixtures of aquaculture therapeutants (Malachite Green, Chloramine-T, and Oxytetracycline) and dissolved organic carbon (DOC) onto the coal-based granular activated carbon 207EA (Sutcliffe-Speakman). These data indicate directly the relative strengths of adsorption of some of the components under the conditions studied and confirm that DOC is generally less strongly adsorbed than most of the therapeutants at the concentrations of interest. This paper also reviews existing multicomponent equilibrium adsorption models and concludes that, for aquaculture applications, the Ideal Adsorbed Solution Theory (IAST) with the Freundlich isotherm is the model that is most suitable. This model was then tested using the experimental mixture data. The results show that IAST with the Freundlich isotherm is very successful at predicting the reduction in adsorption of DOC caused by the presence of competing therapeutants. It tends, however, to underestimate the amounts adsorbed of the therapeutants, particularly when these are present at higher concentrations. In general, the drop in DOC removal caused by the presence of competing therapeutants is quite small. IAST is clearly a good model to use in the design of batch carbon adsorption treatments for therapeutant removal. (C) 2001 Elsevier Science B.V. All rights reserved.

Keywords: Carbon Adsorption, Chloramine-T, Malachite-Green, Oxytetracycline, Dissolved Organic Carbon, Adsorbed Solution Theory, Competitive Adsorption, Activated Carbon, Oxolinic Acid, Fish Farm, Oxytetracycline, Sediments, Persistence, Prediction, Equation

Fachini, A., Leal, M.F.C. and Vasconcelos, M.T.S.D. (2004), Are zeolites capable of modifying the yield of marine micro-algae cultures? A case study with *Emiliania huxleyi* and a product of zeolitic nature. *Aquaculture*, **237** (1-4), 407-419.

Full Text: [A\Aquaculture237, 407.pdf](A/Aquaculture237,%20407.pdf)

Abstract: Growth of the marine alga, Emiliania huxleyi, and chemical changes in the culture medium were assessed in response to the addition of differing concentrations of ZESTEC-56, a product of zeolitic nature (PZN). E. huxleyi was inoculated in natural seawater containing 0.025, 0.050 and 0.10 g l-1 PZN. In addition, algae were also inoculated in a PZN elutriate (1.0 g l-1 PZN in seawater stirred for 30 min). Total concentrations of dissolved trace metals and organic ligands (and respective conditional stability constants) were determined, in all media including the controls, by anodic and cathodic striping voltammetry in the initial medium and after 7-day algal growth. When compared with the control culture, 0.025 and 0.050 g l-1 PZN in situ with E. huxleyi did not significantly change the micro-algae growth yield. The highest PZN amount (0.10 g l-1) caused a decrease both in growth rate and yield. In the PZN elutriate culture cell yield was significantly greater than the controls. The PZN caused changes in the total concentrations of dissolved metallic micro-nutrients, adsorbing some (e.g. Zn) and releasing others (e.g. Mn). The ion-exchange processes seem to be relatively slow, as the extent of changes in the elutriate culture, where the contact between PZN and medium was only 30 min, was much lower than that caused by in situ PZN for 7 days. In addition, the amount of exudates released per cell was also influenced by the PZN probably due to the changes in the available trace elements. This work indicated that the changes caused by zeolites in a culture medium, in terms of micro-nutrient available levels can influence the micro-algae yield in natural seawater cultures. Hence, it follows that the characteristics and concentration of the zeolite should be considered when one wishes to use it in a given aquacultural medium, for instance for stimulation of the bacterium-mediated decomposition of non-consumed fish feed at reduced levels of ammonia. Depending on the seawater trace element composition, characteristics and concentration of the zeolite and algal species, the presence of a suitable zeolite may improve the yield of the cultures, reducing the production costs. Otherwise, an inhibition of growth may occur, which is economically disadvantageous. (C) 2004 Elsevier B.V. All rights reserved.

Keywords: Algal Yield, Copper Complexation, Exudates, Ligands, Nutrient, Phytoplankton, Sea-Water, Seawater, Stripping Voltammetry, Trace Metals, Zeolites

# Title: Aquaculture Research

Full Journal Title: Aquaculture Research

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Journal Country/Territory: England

Language: English

Publisher: Blackwell Science Ltd

Publisher Address: PO Box 88, Osney Mead, Oxford OX2 0NE, Oxon, England

Subject Categories:

Fisheries: Impact Factor

Reilly, A. and Käferstein, F. (1997), Food safety hazards and the application of the principles of the hazard analysis and critical control point (HACCP) system for their control in aquaculture production. *Aquaculture Research*, **28** (10), 735-752.

Full Text: [A\Aqu Res28, 735.pdf](A/Aqu%20Res28,%20735.pdf)

Abstract: During the past 20 years there has been a dramatic global expansion in fish farming, with both positive and negative consequences. Although commercial aquaculture has contributed positively to the economies of many producing countries, there are considerable negative environmental and social impacts. In intensive and semi-intensive systems, artificial feeds supplemented with antibiotics are used to prevent the spread of disease and to improve feed conversion ratios. Current knowledge of the health and environmental impact of antibiotics used in aquaculture is poor, particularly in tropical regions. Residues may remain in fish used for human consumption and antibiotics released into the environment can lead to the development of antibiotic-resistant bacteria in the food chain. The accumulation of waste feeds in ponds stimulates the growth of bacteria, including human pathogens, which can contaminate products and lead to foodborne disease and the rejection of products in export markets, In extensive systems, where fish are produced mainly for the domestic market, different food safety concerns exist. The consumption of aquatic plants and raw or partially cooked freshwater fish has been associated with foodborne trematode infections, These are a major public health problem in East and South East Asia and occur when products that are contaminated by the infective stages of the parasites are consumed. This paper reviews food safety hazards associated with products from aquaculture and proposes the application of principles of the hazard analysis critical control point (HACCP) system as a general strategy to control the hazards identified.

Keywords: Salmo-Salar L, Vibrio-Cholerae, Plesiomonas-Shigelloides, Organochlorine Compounds, Antibiotic-Resistance, Aeromonas-Hydrophila, Drug-Resistance, Fish, Water, Bacteria

# Title: Aquatic Botany

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Journal Country/Territory: Netherlands

Language: English

Publisher: Elsevier Science BV

Publisher Address: Po Box 211, 1000 AE Amsterdam, Netherlands

Subject Categories:

Plant Sciences: Impact Factor 1.338, 53/147 (2006)

Marine & Freshwater Biology: Impact Factor 1.338, 36/79 (2006)

? Wang, S.R., Jin, X.C., Zhao, H.C. and Wu, F.C. (2008), Phosphate biosorption characteristics of a submerged macrophyte *Hydrilla verticillata*. *Aquatic Botany*, **89** (1), 23-26.

Full Text: [2008\Aqu Bot89, 23.pdf](2008/Aqu%20Bot89,%2023.pdf)

Abstract: Phosphate biosorption of Hydrilla verticillata was investigated and compared with its bioaccumulation characteristics. Results obtained from the biosorption isotherms and kinetics showed that maximal phosphate biosorption was 286 mg kg-1, approximately equal to 6-9% of the phosphate bioaccumulation. The biosorption mainly occurred within 5 h, and was highest during the first 30 min. The initial phosphate concentration was an important factor affecting the biosorption process. Phosphate biosorption on H. verticillata was not the main phosphate removal mechanism in our experiments, but it cannot be ignored. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Bioaccumulation, Phosphate Biosorption, Water Quality Improvement, Aquatic Plant, Heavy-Metal Adsorption, Myriophyllum-Spicatum, Aquatic Macrophytes, Artificial Wetlands, Lake-Sediments, Shallow Lake, Clear Water, Growth, Plants, Phosphorus

# Title: Aquatic Chemistry

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ISSN: 0065-2393

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Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Weber, Jr., W.J., Mcginley, P.M. and Katz, L.E. (1995), Distributed reactivity in the sorption of hydrophobic organic contaminants in natural aquatic systems. *Aquatic Chemistry*, **244**, 363-382.

Abstract: Particle-scale soil and sediment heterogeneities are addressed in the context of their effects on the sorption of nonpolar organic contaminants. Sorption by heterogeneous solids results from a variety of local processes involving different reaction mechanisms. Processes examined here to illustrate such effects include sorption by evolutionally immature soft-carbon organic matter, resulting in quasilinear sorption isotherms; sorption by common mineral phases in concentration regions where linear behavior is apparent; and sorption by evolutionally mature diagenetically altered hard-carbon organic matter, for which clearly nonlinear behavior is exhibited. The results demonstrate that the importance of different contributions to overall sorption reactivity can vary as the mass fractions of differently sorbing components change. A model predicated on discretely different interaction energies for different components of heterogeneous sorbents is used to characterise contributions to the sorption of nonpolar contaminants by several different types of soils and sediments.

Keywords: Adsorption, Matter, Organic Matter, Sediments, Soils, Sorption, Suspended-Solids, Water

# Title: Aquatic Chemistry as Introduction Emphasising Chemical Equilibria in Natural Waters

Wiley-Interscience, New York and London

Stumm, W. and Morgan, J.J. (1970), *Aquatic Chemistry an Introduction Emphasising Chemical Equilibria in Natural Waters*, Wiley-Interscience, New York, London, Sydney and Toronto.

# Title: Aquatic Fisheries Management

Full Journal Title: Aquatic Fisheries Management

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

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Language:

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Publisher Address:

Subject Categories:

: Impact Factor

? Bergero, D., Boccignone, M., Di Natale, F., Forneris, G., Palmegiano, G.B., Roagna, L. and Sicuro, B. (1994), Ammonia removal capacity of European natural zeolite tuffs: Application to aquaculture waste water. *Aquatic Fisheries Management*, **25** (8), 813-821.

# Title: Aquatic Toxicology

Full Journal Title: [Aquatic Toxicology](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=4974&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=1134284&md5=77d449329906e7b12d0f638c27446e08)

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Journal Country/Territory: Netherlands

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Publisher: Elsevier Science BV

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Subject Categories:

Marine & Freshwater Biology Toxicology: Impact Factor

Pedersen, S.N., Lundebye, A.K. and Depledge, M.H. (1997), Field application of metallothionein and stress protein biomarkers in the shore crab (*Carcinus maenas*) exposed to trace metals. *Aquatic Toxicology*, **37** (2-3), 183-200.

Full Text: [A\Aqu Tox37, 183.pdf](A/Aqu%20Tox37,%20183.pdf)

Abstract: A field study was conducted to assess the potential use of metallothionein (MT) and stress proteins (stress-70) as biomarkers of trace metal exposure and adverse effects. Shore crabs (Carcinus maenas) were collected from five sites: Three located in the metal-contaminated Fal Estuary and two control sites located in estuaries along the Devon coast (Southwest England). MT concentrations were determined using either a direct method in which MT was quantified by spectrophotometric measurement of SH content, or an indirect method in which MT concentrations were estimated by measuring copper and zinc bound to partially purified MT. The two techniques yielded similar results. Stress protein levels (stress-70) were determined in crab gills using an improved western blotting procedure. Midgut gland copper concentrations were elevated (compared to values in controls) in crabs from the Fal Estuary. No differences in midgut gland zinc concentrations were evident in crabs collected from the five sites. Copper MT concentrations in midgut gland were elevated in crabs from the metal-contaminated Fal Estuary (compared to concentrations in crabs from other sites). However, differences in metal contamination among sites within the Fal Estuary were revealed only when the ratio of cytosolic zinc to copper was examined. Both copper and zinc concentrations in gill tissue reflected the trends in metal contamination in the underlying sediment. Similarly, both copper and zinc MT concentrations measured in gills reflected the copper and zinc exposure gradients. In contrast, stress-70 levels in gills did not appear to correlate with the degree of trace metal exposure. The findings are discussed with regard to the interpretation and potential use of biomarker responses as tools for use in ecological impact assessments.

Notes: highly cited

Srivastava, S., Sinha, R. and Roy, D. (2004), Toxicological effects of malachite green. *Aquatic Toxicology*, **66** (3), 319-329.

Full Text: [A\Aqu Tox66, 319.pdf](A/Aqu%20Tox66,%20319.pdf)

Abstract: This review summarises the wide range of toxicological effects of malachite green (MG), a triarylmethane dye on various fish species and certain mammals. MG is widely used in aquaculture as a parasiticide and in food, health, textile and other industries for one or the other purposes. It controls fungal attacks, protozoan infections and some other diseases caused by helminths on a wide variety of fish and other aquatic organisms. However, the dye has generated much concern regarding its use, due to its reported toxic effects. The toxicity of this dye increases with exposure time, temperature and concentration. It has been reported to cause carcinogenesis, mutagenesis, chromosomal fractures, teratogenecity and respiratory toxicity. Histopathological effects of MG include multi-organ tissue injury. Significant alterations occur in biochemical parameters of blood in MG exposed fish. Residues of MG and its reduced form, leucomalachite green have been reported from serum, liver, kidney, muscles and other tissues as also from eggs and fry. Toxicity occurs in some mammals, including organ damage, mutagenic, carcinogenic and developmental abnormalities. However, despite the large amount of data on its toxic effects, MG is still used as a parasiticide in aquaculture and other industries. It is concluded that the potential of alternative parasiticides, like humic acid, chlorine dioxide and Pyceze, should be explored to replace MG. Until then, MG should be used with extreme care at suitable concentrations and at times when the temperature is low. Removal of residual MG in treatment ponds should also be considered. (C) 2003 Elsevier B.V. All rights reserved.

Keywords: Malachite Green, Aquaculture, Toxicity, Parasiticide, Fish, Oncorhynchus-Mykiss Walbaum, Catfish Ictalurus-Punctatus, Hepatic Preneoplastic Lesions, Proliferative Kidney-Disease, Term Therapeutic Bath, Cyprinus-Carpio L, Rainbow-Trout, Leucomalachite Green, Channel Catfish, Saprolegnia-Parasitica

? Lahnsteiner, F., Berger, B., Kletzl, A. and Weismann, T. (2006), Effect of 17β-estradiol on gamete quality and maturation in two salmonid species. *Aquatic Toxicology*, **79** (2), 124-131.

Full Text: 2006\Aqu Tox79, 124.pdf

Abstract: In the present study the effect of environmentally relevant concentrations of 17 beta-estradiol on gamete quality and gamete maturation in rainbow trout (Oncorhynchus mykiss) and grayling (Thymallus thymallus) was investigated. Male rainbow trout were exposed to 0.5-2.5 ng l-1 17 beta-estradiol for 35 days during the spawning season. At concentrations of >= 1 ng l-1 the semen volume obtained per male was significantly reduced, and after 50 days also the sperm density and the sperm fertility. When male grayling were exposed to 1.0 ng l-1 17 beta-estradiol for 50 days during the prespawning season a similar number of males gave semen as in the control. However, the volume of semen produced per male was decreased. The percentage of motile spermatozoa and their sperm swimming velocity were decreased while the percentage of locally motile spermatozoa was increased. In rainbow trout and grayling also the sperm motility pattern was affected by 17 beta-estradiol exposure. When female rainbow trout were exposed to 0.5-2.5 ng l-1 17 beta-estradiol and egg portions were stripped in 1 week intervals the egg viability changed in a similar way as in the control indicating that egg overripening processes were not influenced by 17 beta-estradiol. When female grayling were exposed to 1.0ng l-1 17 beta-estradiol during the prespawning time ovulation occurred earlier than in the control group (group exposed to 17 beta-estradiol: 35 days after the onset of the experiment, control group 35-50 days after the onset of the experiment). (c) 2006 Elsevier B.V. All rights reserved.

Keywords: 17 Beta-Estradiol, Endocrine Disruptors, Spermatozoa, Eggs, Gamete Quality, Rainbow Trout, Grayling, Trout Oncorhynchus-Mykiss, Rainbow-Trout, Fish, Identification, Metabolism, Parameters, Responses, Ovulation, Effluent, Motility

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Subject Categories:

: Impact Factor

? Vernaza-Pinzon, P. and Alvarez-Bravo, G. (2011), Latin American scientific output in physical therapy/kinesiology. *Aquichan*, **11** (1), 94-107.

Full Text: [2011\Aquichan11, 94.pdf](2011/Aquichan11,%2094.pdf)

Abstract: Objective: Characterize the output of scientific literature in Latin America between 2000 and 2007 with respect to physical therapy/kinesiology. Method: The authors conducted a retrospective study of 1,700 articles on physical therapy/kinesiology published in the SciE-LO and LILLACS databases. The variables studied were: document frequency, number of documents found, scientific output per country, scientific output for each describer with respect to physical therapy/kinesiology, number of authors, institutional affiliation, type of publication, language, type of study, and number of works listed in the bibliography. Results: The trend in scientific output per country shows Brazil leads in Latin America, with 70.1 % of the scientific output on physical therapy/kinesiology, followed by Chile with 13.4 %, Colombia and Venezuela with 6 %, Argentina with 3.4 %, and Cuba and Peru with less than 1 % of the output. Conclusions: Although bibliometric studies in only one field of knowledge do not resolve the need to measure scientific activity, they provide clarity and guide research work. Knowing what studies on physical therapy/kinesiology have been done in the region will enable academics to generate a Latin American research policy that is of benefit to the profession, the community and the context.

Keywords: Academics, Authors, Bibliometric, Bibliometrics, Brazil, Colombia, Databases, Latin America, Latin America (Source: Decs), Literature, Physical Therapy, Physiotherapy, Policy, Publication, Research, Trend

# Title: Arab Gulf Journal of Scientific Research

Full Journal Title: Arab Gulf Journal of Scientific Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mekhemer, W.K., Hefne, J.A., Alandis, N.M., Aldayel, O.A. and Aldurahim, A. (2009), Thermodynamic and kinetic of Cu(II) removal from water by adsorption using natural bentonite. *Arab Gulf Journal of Scientific Research*, **27** (3), 127-138.

Full Text: 2009\Ara Gul J Sci Res27, 127.pdf

Abstract: The adsorption kinetics of natural commercial bentonite (NB) with respect to Cu (II) has been studied in order to consider its application to purify metal finishing wastewaters. The batch method has been employed, using metal concentrations in solution ranging from 40 to 2000 mg/l. We have investigated how solution pH, temperature, adsorbent amount, contact time, washing and calcinations of bentonite (the calcinations of bentonite at 700 C and washed bentonite termed by CB and WB, respectively) affect this process. Results of kinetic experiments showed that Cu(II) adsorption rate was fast, and more than 90% of Cu adsorption occurred within 5 min. Among the kinetic models tested, the adsorption kinetics was best described by the pseudo-second-order equation. The adsorption capacity of Cu (II) ions on NB has increased with increasing pH, adsorbent amount and temperature. The Langmuir adsorption isotherm properly describes the equilibrium adsorption and the maximum adsorption capacities of NB towards Cu (II) were determined to be 24.5, 35.5 and 39.3 mg/g at 293, 313, and 333 K, respectively. Values of Gibbs free Energy (ΔGº) ranging from -17.2, -18.56, and -19.9 kJ/mol suggest that the adsorption process is spontaneous and mainly governed by specific surface interaction mechanism. The values of standard enthalpy (ΔHº) and entropy (ΔSº) were 2.494 kJ/mol and 67.29 J/ (mol K), respectively. The adsorption capacity of washed bentonite sample (WB) was significantly higher than that of Natural bentonite sample (NB) and calcined bentonite sample (CB). Results of this study can be useful for future up-scaling in using this material as a low-cost adsorbent for the removal of Cu (II) from industrial wastewater.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacities, Adsorption Capacity, Adsorption Isotherm, Adsorption Kinetics, Adsorption Rate, Application, Aqueous-Solution, Batch, Batch Method, Bentonite, Bentonite Clay, Cadmium, Calcinations, Calcined, Capacity, Chromium, Copper, Cu, Cu(II), Divalent Metal-Ions, Enthalpy, Entropy, Equilibrium, Experiments, Heavy-Metals, Industrial Wastewater, Interaction, Ions, Isotherm, Isotherms, Kinetic, Kinetic Models, Kinetics, Langmuir, Langmuir Adsorption Isotherm, Low Cost, Low Cost Adsorbent, Low-Cost Adsorbent, Mechanism, Metal, Models, Natural, pH, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Equation, Removal, Single-Component, Solution, Sorption, Specific Surface, Standard, Surface, Surface Interaction, Temperature, Thermodynamic, Thermodynamics, up Scaling, Upscaling, Waste-Water, Wastewater, Wastewaters, Water

# Title: Arabian Journal of Chemistry

Full Journal Title: [Arabian Journal of Chemistry](http://www.sciencedirect.com/science/journal/18785352)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Soliman, E.M., Ahmed, S.A. and Fadl, A.A. (2011), Reactivity of sugar cane bagasse as a natural solid phase extractor for selective removal of Fe(III) and heavy-metal ions from natural water samples. *Arabian Journal of Chemistry*, **4** (1), 63-70.

Full Text: [2011\Ara J Che4, 63.pdf](2011/Ara%20J%20Che4,%2063.pdf)

Abstract: This work introduces the feasibility of using sugar cane bagasse (SCB) - a sugar cane industry waste - as a selective solid phase extractor for Fe(III). The order of metal uptake capacities in mu mol g-1 for the extraction of six tested metal ions from aqueous solution using static technique is Fe(HI) > Cu(II) > Pb(II) > Zn(II) > Cd(II) > Co(II). Since SCB exhibits remarkable binding characteristics for Fe(III), special interest was devoted for optimizing its uptake and studying its selectivity properties under static and dynamic conditions. In this respect, batch experiments were carried out at the pH range 1.0-4.0, initial concentration of metal ion (10-100 mu mol), weight of phase (25, 50, 75, 100, 125 and 150 mg) and shaking time (10, 30, 45, 60, 90, 120 and 150 min). FT-IR spectra of SCB before and after uptake of Fe(III) were recorded to explore the nature of the functional groups responsible for binding of Fe(III) onto the studied natural biosorbent. The equilibrium data were better fitted with Langmuir model (r2 = 0.985) than Freundlich model (r2 = 0.934). Moreover, Fe(III) sorption was fast and completed within 60 min. The adsorption kinetics data were best fitted with the pseudo-second-order type. As a view to find a suitable application of SCB based on its unique property as a benign sorbent, it was found that, Fe(III) spiked natural water samples such as doubly distilled water (DDW), drinking tap water (DTW), natural drinking water (NDW), ground water (GW) and Nile River water (NRW) was quantitatively recovered (> 95.0%) using batch and column experiments, with no matrix interferences. (C) 2010 King Saud University. All rights reserved.

Keywords: Activated Carbons, Adsorption, Adsorption Kinetics, Agricultural Waste, Aqueous Solution, Aqueous-Solutions, Beet Pulp, Biosorbent, Cd(II), Co(II), Cu(II), Equilibrium, Equilibrium Isotherm, Fe(III), Fly-Ash, Freundlich, FT-IR, FTIR, Green-Dye, Heavy Metals, Industry Waste Material, Kinetics, Langmuir, Low-Cost Adsorbents, Natural Water Samples, Pb(II), pH, Removal, Selective, Silica-Gel, Sorption, Sugar Cane Bagasse, Waste

? El-Naggar, I.M., Zakaria, E.S., Ali, I.M., Khalil, M. and El-Shahat, M.F. (2012), Kinetic modeling analysis for the removal of cesium ions from aqueous solutions using polyaniline titanotungstate. *Arabian Journal of Chemistry*, **5** (1), 109-119.

Full Text: [2012\Ara J Che5, 109.pdf](2012/Ara%20J%20Che5,%20109.pdf)

Abstract: Polyaniline titanotungstate has been synthesized by incorporation of organic polymer polyaniline into the inorganic precipitate of titanotungstate. This material was characterized using X-ray, IR and TGA studies. The influences of initial concentration of metal ions, particle size and temperature have been reported. The comparison of composite and inorganic materials was studied and indicating that the composite material is better than the inorganic in selectivity of Cs+ ions. Thermodynamic parameters, such as changes in Gibbs free energy (ΔG), enthalpy (ΔH), and entropy (ΔS) have been calculated. The numerical values of ΔG decrease with an increase in temperature, indicating that the sorption reaction of adsorbent was spontaneous and more favorable at higher temperature. The positive values of ΔH correspond to the endothermic nature of sorption processes and suggested that chemisorptions were the predominant mechanism. A comparison of kinetic models applied to the sorption rate data of Cs+ ions was evaluated for the pseudo first-order, the pseudo second-order, intraparticle diffusion and homogeneous particle diffusion kinetic models. The results showed that both the pseudo second-order and the homogeneous particle diffusion models were found to best correlate the experimental rate data. Self diffusion coefficient (D(i)), Activation energy (Ea) and entropy (ΔS\*) of activation were also computed from the linearized form of Arrhenius equation. (C) 2010 King Saud University. Production and hosting by Elsevier B.V. All rights reserved.

Keywords: Activation, Activation Energy, Adsorbent, Adsorption, Behavior, Cation-Exchange Material, Cesium, Concentration, Electrical-Conductivity, Enthalpy, Entropy, Equilibria, Heavy-Metal Ions, Hybrid, Ion Exchange, IR, Kinetic, Kinetic Models, Kinetics, Mechanism, Metal Ions, Modeling, Polyaniline, Polyaniline Titanotungstate, Sorption, Sorption, Temperature, Thermodynamic, Thermodynamic Parameters, Waste, Zirconium-Phosphate

# Title: Arabian Journal for Science and Engineering

Full Journal Title: [Arabian Journal for Science and Engineering](http://ajse.kfupm.edu.sa/jindx_theme.asp)

ISO Abbreviated Title: Arab. J. Sci. Eng.

JCR Abbreviated Title: Arab J Sci Eng

ISSN: 0377-9211

Issues/Year: 4

Journal Country/Territory: Saudi Arabia

Language: English

Publisher: King Fahd Univ Petroleum Minerals

Publisher Address: C/O Univ, Dhahran 31261, Saudi Arabia

Subject Categories:

Multidisciplinary Sciences: Impact Factor 0.060, / (2000)

? Sadiq, M. and Hussain, G. (1997), Drinking water quality in Saudi Arabia: An overview. *Arabian Journal for Science and Engineering*, **21** (1C), 153-164.

Full Text: [1997\Ara J Sci Eng21, 153.pdf](1997/Ara%20J%20Sci%20Eng21,%20153.pdf)

Abstract: Published literature on the Kingdom of Saudi Arabia’s drinking water quality (groundwater and desalted water) are reviewed. Data on general water quality parameters (salinity and major cations and anions), for both groundwater and drinking water, are available, but fragmented. The majority of groundwater aquifers, especially in the central and eastern parts, are highly saline and the water requires desalting to become fit for human consumption. In some areas, over-pumping has lowered the groundwater table by several meters and the water quality has also been changing.

The data on toxic trace metal concentrations, either in the groundwater or drinking water, are limited. However, new data on the effect of the distribution network on water quality have been presented. Corrosion of utility pipes and leaching of chemicals from PVC pipes could elevate metal concentrations in drinking waters supplied to the end users. The problems of drinking water supplies in Saudi Arabia are identified and recommendations are made to improve the drinking water quality in the Kingdom.

? Hasar, H. and Öbek, E. (2002), Removal of toxic metals from aqueous solution by duckweed (Lemna minor L): Role of harvesting and adsorption isotherms. *Arabian Journal for Science and Engineering*, **26** (2C), 47-54.

Full Text: Ara J Sci Eng26, 47.pdf

Abstract: The sorption of Cr(VI), Cu(II) and Cd(II) ions from aqueous solutions into duckweed has been investigated. Three reactors have been used in the experimental studies. Whereas duckweed was not harvested in the first reactor, it was harvested once every four days and once every two days in the second and the third reactors, respectively. The detention time was 8 days. For all the metal ions, the results show that heavy metals can be successfully removed from solutions if duckweed is frequently harvested. When duckweed was harvested every two days, while, for initial concentrations of 5 mg l-1, Cr(VI) ions were measured at 0.5 mg l-1 and the levels of Cu(II) and Cd(II) were not detectable, for initial concentrations of 10 mg l-1, final concentrations were: Cr(VI) 0.90; Cu(II) 0.94; and Cd(II) 2.10 mg l-1. In the isotherm studies, the Langmuir and Freundlich constants have been calculated for the results obtained during the detention time of four days in the second reactor. The experimental adsorption data fitted reasonably well the Freundlich isotherm.

Keywords: Duckweed, Harvesting, Removal, Sorption, Heavy Metal, Langmuir, Freundlich Waste-Water Treatment, Coconut Husk, Rice Husk, Cadmium, Biomass, Copper.

? Sahmoune, M.N. and Louhab, K. (2010), Kinetic analysis of trivalent chromium biosorption by dead Streptomyces rimosus biomass. *Arabian Journal for Science and Engineering*, **35** (2B), 69-80.

Full Text: [2010\Ara J Sci Eng35, 69.pdf](2010/Ara%20J%20Sci%20Eng35,%2069.pdf)

Abstract: This work is a contribution to the use of natural, cost-effective biosorbent in industrial wastewater treatment processes, addressing more particularly the effluents resulting from the tanning industry. A dead mycelial bacterial biomass (i.e. Streptomyces rimosus) collected as waste from an antibiotic production plant was tested as a biosorbent for chromium(III). The results showed that trivalent chromium ion presents a good affinity with respect to the biomass. In batch system, the best performance of chromium(III) was obtained at strongly acidic pH (around 4.8). The sorption kinetics obeyed pseudo-second order model and film diffusion was the main limiting step in the biosorption kinetics. Applying the sips isotherm modelling; the highest biosorption efficiency was over 82 mg.g-1.

Keywords: Activated Carbon, Adsorption, Algal Biomass, Aqueous-Solution, Batch, Batch System, Biomass, Biosorbent, Biosorption, Chromium, Contribution, Dead, Diffusion, Effluents, Equilibrium, Industrial, Industrial Wastewater, Intraparticle Diffusion, Isotherm, Kinetic, Kinetics, Limiting Step, Model, Modelling, Performance, pH, Processes, Production, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Sorption, Sorption Kinetics, Streptomyces, Streptomyces Rimosus, System, Thermodynamics, Treatment, Trivalent Chromium, Waste, Wastewater, Wastewater Treatment, Zinc

? Bhatti, H.N., Akhtar, N. and Saleem, N. (2012), Adsorptive removal of methylene blue by low-cost *Citrus sinensis* bagasse: Equilibrium, kinetic and thermodynamic characterization. *Arabian Journal for Science and Engineering*, **37** (1), 9-18.

Full Text: [2012\Ara J Sci Eng37, 9.pdf](2012/Ara%20J%20Sci%20Eng37,%209.pdf)

Abstract: The potential of *Citrus sinensis* (mosambi) bagasse to remove methylene blue, a cationic dye, from synthetic solutions has been investigated in batch mode. Equilibrium and kinetics studies were carried out while varying the pH, biosorbent dose, biosorbent size, contact time and initial methylene blue concentration. The sorption equilibrium for methylene blue by *C. sinensis* bagasse was reached within 3 h at 30AºC. The sorption data was analyzed using pseudo-first-order, pseudo-second-order and intraparticle diffusion kinetic models. The sorption kinetics were found to follow a pseudo-second-order kinetic model. The maximum sorption capacity of C. sinensis bagasse was found to be 96.4 mg/g under optimum conditions. The equilibrium data in synthetic solutions were well described by the Langmuir isotherm model. The thermodynamic parameters, Gibbs free energy (ΔGAº), change in enthalpy (ΔHAº) and change in entropy (ΔSAº), for biosorption of methylene blue by C. sinensis bagasse were calculated to determine the feasibility of the process. A sorption-desorption study was also carried out using different eluents to determine the possibility of recycling the biosorbent.

Keywords: Adsorbent, Aqueous-Solution, Basic Dye, Batch, Biosorbent, Biosorption, Biosorption, Citrus Sinensis, Concentration, Desorption, Effluents, Enthalpy, Entropy, Equilibrium, Equilibrium And Kinetics, Equilibrium Modeling, Isotherm, Kinetic, Kinetic Models, Kinetics, Langmuir, Langmuir Isotherm, Methylene Blue, pH, Removal, Rice Husk, Sawdust, Sorption, Sorption Kinetics, Thermodynamic, Waste

# Title: AAA-Arbeiten aus Anglistik und Amerikanistik

Full Journal Title: AAA-Arbeiten aus Anglistik und Amerikanistik

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0171-5410

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bernhart, W. and Zach, W. (1984), In honor of Stanzel, Franz, K. 60th birthday - a bibliography of his works and works quoting him compiled from the Arts and Humanities Citation Index. *AAA-Arbeiten aus Anglistik und Amerikanistik*, **9** (1), 3-21.

# Title: Arbor-Ciencia Pensamiento y Cultura

Full Journal Title: Arbor-Ciencia Pensamiento y Cultura

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Alberola, A., Fernandez, M.T., Vazquez, M. and Viesca, R. (1985), Bibliometric Study of Arbor. *Arbor-Ciencia Pensamiento y Cultura*, **122** (479-80), 125-137

Keywords: Bibliometric

? Deandres, M.P. (1987), Is it possible to evaluate the scientific-technical activities of the Csic + Statistical-methods, bibliometric indicators and the ‘Science Citation Index’. *Arbor-Ciencia Pensamiento y Cultura*, **126** (495), 9-48.

Keywords: Bibliometric, Citation, Mar, Science Citation Index

? Vazquez, M., Fernandez, M.T., Dedios, M.V. and Delaviesca, R. (1988), Bibliographical and Bibliometric Study of the Revista-Espanola-De-Fisiologia. *Arbor-Ciencia Pensamiento y Cultura*, **130** (511-12), 21-43

Keywords: Bibliometric

? Martin, M.J., Rey, J. and Plaza, L.M. (1999), Spanish research published in national science and technology journals during the period 1991-1996. A bibliometric study. *Arbor-Ciencia Pensamiento y Cultura*, **162** (639), 307-325

Keywords: Bibliometric, Bibliometric Study, Journals, Research, Science, Science And Technology, Technology

? Delgado Lopez-Cozar, E. and Fernandez Cano, A. (2002), The case study in the databases of the Science Citation Index, Social Science Citation Index, and Arts and Humantities Citation Index (1992-2000). *Arbor-Ciencia Pensamiento y Cultura*, **171** (675), 609-629.

Keywords: Case Study, Citation, Databases, Mar, Science Citation Index, Social Science Citation Index

? Gonzalez-Alcaide, G., Valderrama-Zurian, J.C. and Aleixandre-Benavent, R. (2009), Spanish scientific research about popular science: Actual position and futur challenges. *Arbor-Ciencia Pensamiento y Cultura*, **185** (738), 861-869.

Abstract: Spanish Scientific Research about Popular Science is analyzed to identify the main scientific agents, dissemination means and subjects in this field. It is an heterogeneous area related to several scientific disciplines and purposes, stand out above them Information and Education. 286 journal articles and 50 PhD Thesis have been analyzed, observing a high increase of publications in 90s remaining until now. The five most important research cores identified are the followings: Science Journalism, Science Literacy, Linguistics and the researches related to Museums and Scientific Disciplines such as Medicine, Environment or Archaeology.

Keywords: Bibliometrics, Popular Science, Publications, Research, Research Areas

# Title: Archaeofauna

Full Journal Title: Archaeofauna

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bartosiewicz, L. and Choyke, A.M. (2002), Archaeozoology in Hungary. *Archaeofauna*, **11**, 117-129.

Abstract: This study describes how two different branches of investigation, archaeology and zoology/paleontology, dependent on geopolitical and ideological circumstances, have effected the emergence of archaeozoology in Hungary during the 1860s. The second aim was to study, whether the consideration of ideological context by certain scholars may have been the reason behind historical influences in archaeozoology. Our results, however, suggest that individual contribution have been of major significance in this discipline, cultivated only by a minority of experts in Hungary. A quantitative analysis was carried out on the basis of bibliographical data representing 30 years, in order to characterize key features of archaeozoological research in Hungary and their coincidence with political and cultural trends. The basis of calculations was the chronological, regional and linguistic composition of publications dated to between 1965 and 1995. This simple scientometric description shows that international cooperation in archaeozoology has profited from both economic stability and the gradual decline of political isolation during the 1960s and 1990s. The dominance of prehistoric research (a very international period) and the quantities of foreign language publications (especially in English) clearly illustrate this trend. Considering these forces may help in fine-tuning the education and practice of our discipline in spite of mounting difficulties in employment and funding in general at the beginning of the new millennium.

Keywords: Analysis, Archaeology, Composition, Context, Cooperation, Cultural, Data, Economic, Education, Employment, Experts, Funding, General, Hungary, International, International Cooperation, Investigation, Practice, Publications, Quantitative Analysis, Regional, Research, Scientometric, Significance, Stability, Trend, Trends

# Title: Archaeologies-Journal of the World Archaeological Congress

Full Journal Title: [Archaeologies-Journal of the World Archaeological Congress](http://www.springerlink.com/content/120598/?p=163a38e7b0dc42f78a615da63ead3c0e&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mallía, M.S. and Vidal, A.S. (2009), From the opposite corner: A bibliometric analysis of research on American archaeology in European publications. *Archaeologies-Journal of the World Archaeological Congress*, **5** (3), 446-467.

Full Text: [2009\Arc-J Wor Arc Con5, 446.pdf](2009/Arc-J%20Wor%20Arc%20Con5,%20446.pdf)

Abstract: We see what we are prepared to see. Scientific research aims at breaking down this situation, analysing its subjects/objects of study from different points of view. Although multiple meanings can be derived from every question and a myriad of positions can be adopted, some are bound to be silenced by traditional criteria of authenticity. Archaeology is not an exception to this: the prevailing agenda severely impacts on our perception of what archaeological practice consists. In turn, its ethos is recreated as part of our own identity processes through our productions, whether by passively accepting monolithic standards or by dynamically proposing alternative positions in response. The study of the prehistoric and colonial periods in America can be a good test bed for surveying the influence of academic background upon the analysis of human history. Here we review two Spanish journals of American studies to discuss the different orientations of the authors according to their provenance. Plotted against the country represented by the authors, we consider his/her research as regards the object of study (ie. artefacts/written sources), its origin, chronology and, finally, the aim of the paper. We found interesting orientations in relation to focus on particular subjects, most probably conditioned by the ontology of the researchers. Although the selection is quite taxative, it may usefully complement studies carried out in the Americas.

Keywords: American Studies, Archaeology, Bibliometric Analysis, Research, Research Ontology, Spanish Journals

# Title: Archiv fur Geschwulstforschung

(Arch Geschwulstforsc)

? Fishbein, L. (1986), Perspectives in metal carcinogenesis. I. Selenium. *Archiv fur Geschwulstforschung*, **56** (1), 53-78.

Abstract: This review has focused primarily on the sources of exposure to selenium and its role as an antioxidant as well as its anticarcinogenic and antimutagenic properties. Selenium is an essential trace element and a constituent of glutathione peroxidase in human erythrocytes. Numerous studies with animals have demonstrated that it is a potent inhibitor of virally-and chemically-induced tumorigenesis when administered continuously in a variety of tumor systems (predominantly in the skin, liver, colon, and mammary gland). The mechanisms by which selenium inhibits tumorigenesis is not definitely known. Several epidemiological studies have demonstrated statistically significant inverse associations between human cancer mortalities in different populations. In these studies, the regional availabilities of selenium were measured via a variety of means, including blood selenium levels, the concentration of selenium in grains and forage crops or from calculated apparent selenium intake estimated from food consumption and consumption data. These animal and human studies demonstrating inverse associations between tumorigenesis and selenium levels have led to suggestions that selenium be considered a prophylactic agent in the chemoprevention of tumorigenesis. It would appear prudent to avoid the unnecessary supplementation of normal diets with selenium.

# Title: Archiv fur Hydrobiologie

Full Journal Title: Archiv fur Hydrobiologie

ISO Abbreviated Title: Arch. Hydrobiol.

JCR Abbreviated Title: Arch Hydrobiol

ISSN: 0003-9136

Issues/Year: 13

Journal Country/Territory: Germany

Language: Multi-Language

Publisher: E Schweizerbartsche Verlags

Publisher Address: Naegele U Obermiller Johannesstrasse 3A, D 70176 Stuttgart, Germany

Subject Categories:

Limnology: Impact Factor 1.072, / (2000)

Marine & Freshwater Biology: Impact Factor 1.072, / (2000)

? Noraho, N. and Gaur, J.P. (1996), Cadmium adsorption and intracellular uptake by two macrophytes, *Azolla pinnata* and *Spirodela polyrhiza*. *Archiv fur Hydrobiologie*, **136** (1), 135-144.

Abstract: *Azolla pinnata* and *Spirodela polyrhiza* showed profound ability to take up Cd from ambient medium. Cd adsorption by test plants occurred rapidly during the initial stage of incubation, but the process slowed down and reached an equilibrium in 120 min. This suggests the presence of two kinds of sites, reacting rapidly or slowly with Cd. S. polyrhiza had more of the former type of sites. Adsorption constituted 71-86 % of total Cd uptake by test plants. Intracellular uptake of Cd occurred at a constant rate, following typical Michaelis-Menten kinetics. Dead plants accumulated two times more Cd than living plants, due perhaps to absence of a permeability barrier which resulted in Cd accumulation at intracellular locations as well. Cd adsorbed by dead plants could be effectively displaced with chemicals like NaCl, CaCl2 and EDTA. Cd sorption ability of dead plants did not diminish up to 10 successive cycles of sorption and desorption, as long as plants did not become fragmented.

Keywords: Moss Rhytidiadelphus-Squarrosus, Toxicity, Duckweed, Culture

# Title: Archiv fur Lebensmittelhygiene

Full Journal Title: Archiv fur Lebensmittelhygiene

ISO Abbreviated Title: Arch. Lebensm.hyg.

JCR Abbreviated Title: Arch Lebensmittelhyg

ISSN: 0003-925X

Issues/Year: 6

Journal Country/Territory: Germany

Language: Multi-Language

Publisher: M H Schaper GmbH Co KG

Publisher Address: Postfach 16 42 16 52 Kalandstrasse 4, W-3220 Alfeld, Germany

Subject Categories:

Chemistry, Applied: Impact Factor 0.327, 40/55 (2000)

Food Science & Technology Toxicology: Impact Factor

? Moy, G., Kaferstein, F., Kim, Y.M., Motarjemi, Y. and Quevedo, F. (1993), Dietary exposure to lead, cadmium, mercury and polychlorinated-biphenyls. *Archiv fur Lebensmittelhygiene*, **44** (2), 45-51.

Abstract: Chemical contaminants present in food may result from their natural occurrence in soil or water, from their production by microorganisms in food or in the food chain, from agricultural practices and from food processing and packaging. However, perhaps of most concern from a public health standpoint are heavy metals and organic substances which predominantly arise from industrial and other human activities which pollute the environment. Many of these contaminants may enter the food supply in sufficient amounts as to present a potential hazard for human health. Data for lead, cadmium, mercury and PCBs collected by GEMS/Food and from other sources have been presented. Assessment of the dietary intakes of these contaminants indicates that the large majority of the population in reporting countries are not exposed to levels above the provisional tolerable levels recommended by JECFA and national authorities. However, for may local areas and for certain groups of consumers with high consumption levels, dietary intakes may approach, and in certain instances, exceed tolerable levels.

Keywords: Breast-Milk, Pesticides, Fish, Consumers, Foods, Women

# Title: Archiv fur Psychiatrie und Nervenkrankheiten

Full Journal Title: [Archiv fur Psychiatrie und Nervenkrankheiten](http://www.springerlink.com/content/101492/?p=0b6463e9383a44929c8504313999e745&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Heilbronner, K. (1900), Ueber die Beziehungen zwischen Demenz und Aphasie. *Archiv fur Psychiatrie und Nervenkrankheiten*, **33** (2), 366-391.

Full Text: [-1959\Arc Psy Ner33, 366.pdf](-1959/Arc%20Psy%20Ner33,%20366.pdf)

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Full Text: [-1959\Arc Psy Ner33, 366.pdf](-1959/Arc%20Psy%20Ner33,%20366.pdf)

# Title: Archives of Andrology

Full Journal Title: [Archives of Andrology](http://informahealthcare.com/loi/aan)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0148-5016

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Yang, H., Pan, B.C. and Chen, J. (2006), Citation analysis of five journals in andrology. *Archives of Andrology*, **52** (6), 433-440.

Full Text: [2006\Arc And52, 433.pdf](2006/Arc%20And52,%20433.pdf)

Abstract: Aim: To find out features in literature demand by researchers in the field of andrology and to offer advice on literature utilization and journal management. Methods: Five andrology journals indexed by Science Citation Index Expanded (SCI-E) (Andrologia, Archives of Andrology, Asian Journal of Andrology, International Journal of Andrology, and Journal of Andrology) were included in the study. Original articles, editorials, reviews, corrections and letters from these journals were analyzed with bibliometric method for document loading, citations, information absorbing ability, and geographical coverage. Results: The average number of references in each paper was 28.78. The main type of references was periodicals (94.32%), while books and other sources accounted for only 5.68%. Average Price index was 30.14%. The number of references in the first ranking 10 periodicals cited by the five journals made up 34.53% of the total references cited. Geographically, the five journals covered 6 continents with 42 countries or regions. Conclusion: Andrology journals have a wide coverage of literatures, which are related to reproductive medicine, urology, endocrinology and biochemistry. References in andrology journals are mainly periodicals and are relatively old. US, China and Japan lead the world in andrology researches for the number of papers published.

Keywords: Andrology, Bibliometric, Citation, Citation Analysis, Citation Index, Citations, Countries, Impact, Journals, Literature, Management, Medical Literature, Papers, Patterns, Periodicals, Science, Science Citation Index, US

# Title: Archives of Biochemistry and Biophysics

Full Journal Title: [Archives of Biochemistry and Biophysics](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6701&_auth=y&_acct=C000010619&_version=1&_urlVersion=0&_userid=4033922&md5=cfeaeee636f0c271fcfd10a9f5c382bc)

ISO Abbreviated Title: Arch. Biochem. Biophys.

JCR Abbreviated Title: Arch Biochem Biophys

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Trurnit, H.J. (1954), Studies on enzyme systems at a solid-liquid interface. II. The kinetics of adsorption and reaction. *Archives of Biochemistry and Biophysics*, **51** (1), 176-199.

Full Text: [-1959\Arc Bio Bio51, 176.pdf](-1959/Arc%20Bio%20Bio51,%20176.pdf)

Abstract: The kinetics of adsorption of chymotrypsin (ChTr) from solution onto a solid surface has been studied experimentally and theoretically. On this basis the initial phase of the reaction of ChTr with surface-denatured bovine serum albumin at the liquid-solid interface can be described qualitatively and quantitatively.

Experiment and theory show furthermore that the recording ellipsometer may be used to measure coefficients of diffusion rapidly and in extremely dilute solutions.

It is emphasized that interfacial enzyme reaction studies of this type permit one to investigate the initial reaction phase more easily and in finer detail than studies of bulk reactions, where very rapid methods have to be employed.

? Lowry, R.J. and Sussman, A.S. (1956), Physiology of the cell surface of *Neurospora ascospores*. II. Interference with dye adsorption by polymyxin. *Archives of Biochemistry and Biophysics*, **62** (1), 113-124.

Full Text: [-1959\Arc Bio Bio62, 113.pdf](-1959/Arc%20Bio%20Bio62,%20113.pdf)

Abstract: Polymyxin B prevents the germination of ascospores of *Neurospora tetrasperma* with an *LD*50 of 3–4 p.p.m. The toxic effect of polymyxin is partially reversed by calcium and magnesium ions. The effect of polymyxin on the respiration of activated ascospores does not become apparent until after 2 hr. The effect upon respiration is reversed by calcium ions. Dormant and activated ascospores remove about the same amount of polymyxin from solution almost immediately upon exposure to the antibiotic. After 90 min. the apparent uptake of activated cells is markedly diminished while that of the dormant spores increases slightly. Polymyxin competes noncompetitively with methylene blue for sites on the surface of the cells when added simultaneously with the dye. However, if the antibiotic is added before methylene blue, dye uptake is almost entirely suppressed and an uncompetitive type of inhibition results. These data, in conjunction with those showing polymyxin uptake by cell-wall fragments, suggest that the antibiotic occupies sites on the surface of the ascospore and that these sites differ from those binding methylene blue.

# Title: Archives of Budo

Full Journal Title: [Archives of Budo](http://www.archbudo.com/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Barczynski, B.J. (2010), Preferences of the employees of the Polish Academies of Physical Education concerning articles published in Polish journals on sports science and sports medicine, included in the ministerial list - contribution to scientometrics analyses from the perspective of the educational aim and of the process of creation of the knowledge society. *Archives of Budo*, **6** (2), 101-110.

Full Text: [2010\Arc Bud6, 101.pdf](2010/Arc%20Bud6,%20101.pdf)

Abstract: Background and Study Aim One of the key elements of evaluation of achievements obtained by scientists and scientific institutions are the scientific articles published in journals included in the ‘ministerial list’. In Poland, the evaluation is conducted in two categories: (A) journals listed in Journal Citation Report (10-30 scores), (B) Polish or foreign journals mentioned in the ‘ministerial list’ (1-6 scores). It is hard to reliably estimate motives crucial for the decision on publication of a selected article in a given scientific journal. It is much easier to establish the preferences of authors concerning their choice of journal to publish the article. Pragmatics requires that the author employed at a university of specific type preferred journals of category (A) and those of the highest score in category (B) and corresponding to the type of university at the same time. As far as Polish Academies of Physical Education (APE) are concerned (there are 6 of them), corresponding journals are the ones on sports science and sports medicine. The aim of this paper was to find out whether the employees of the Polish Academies of Physical Education publish their articles in journals on sports science and sports medicine, included in the ministerial list, primarily of the highest value. Material/Methods: The study applied the method of documentation analysis. The analysis included original papers, reviews, short communications, editorials and letters to the Editors published by the employees of Polish higher schools in 30 Polish journals concerning sports science and sports medicine. The preference criterion was established on the basis of the number of articles published by authors of one kind of Polish higher schools in a specific, scored journal from the ‘ministerial list’. Results: In the year 2008, the employees of 67 Polish higher schools published 751 articles in total (original papers, reviews, short communications, editorials and letters to the Editors) in 30 Polish journals on sports science and sports medicine, included in the ‘ministerial list’. Authors published their articles mainly in 4-score journals (55%) and only 2% of all articles were published in 10-score journals. Conclusions: Possibility of deepen analysis of the preferences of the employees of the Polish APEs and other Polish higher schools concerning publication of the articles in Polish journals on sports science and sports medicine from the ministerial list is limited by the lack of access to basic information on authors (scientific speciality, research field, accomplished and implemented grants, publications etc.). Thus, this relatively high publishing activity of the employees of universities, medical universities, non-public higher schools, technical universities and pedagogical universities in journals devoted to the aforementioned subjects should be explained by interesting field of research, not only for APEs’ employees. This interest demonstrated by authors is the proof that the subject of articles published in sports science and sports medicine journals is being taken at many Polish APEs. However, there are no empirical arguments allowing for a clear statement that articles are written only or mostly by specialists of sports science and sports medicine.

Keywords: Author, Citation, Contribution, Evaluation, Institutions, Journals, Medicine, Preferences, Publication, Publications, Research, Science, Scientometrics, Sports Science

? Barczynski, B.J., Bak, R., Czamy, W. and Kalina, R.M. (2011), Preferred by Polish students of physical education subject matter and type of bachelor theses in 2008-2010. *Archives of Budo*, **7** (1), 41-47.

Full Text: [2011\Arc Bud7, 41.pdf](2011/Arc%20Bud7,%2041.pdf)

Abstract: Background One of the simplest, synthetic criteria for evaluation the candidate’s qualifications for employment as a teacher of a particular subject is the quality of bachelor’s or master’s thesis. This recommendation can be deduced from the main arrangements of the European Qualifications Framework (EQF). The aim of study is to answer three questions: (1) Is the type of school a significant differentiating factor preferred by students of subject matter and type of bachelor thesis? (2) Is certain subject matter of bachelor theses particularly dominate in the preferences of students? (3) Do students regardless of the type of school definitely prefer one of possible forms of graduation - writing and the defence of bachelor thesis or graduation exam? Material/Methods: Randomization was based on intentional selection. 176 graduates from Faculty of Physical Education, University of Rzeszow (UR) were examined and 86 graduates from Faculty of Physical Education, Pawel Wlodkowic University College in Plock (UC), who completed first cycle physical education studies in Poland in 2008-2010. The period of functioning each of these faculties did not exceed ten years. An anonymous questionnaire was used in the own elaboration. Results: UC graduates prefer subject matter of bachelor theses specific to the education of physical education: 59% concerns to the biological basis of human development (dominate Kinesiology, Anatomy, Anthropology) and 27% of managing this development (dominate the methodology of physical education, sport theory.) Furthermore 62% of them as the proper form of completion of the studies point out writing and the defence of bachelor thesis, and 65% that it should be an empirical work, 7% declare theoretical. UR graduates prefer subject matter of bachelor theses which are not qualify directly to the competence of the physical education teacher (27%) or qualify indirectly i.e. history (17%); writing and the defence of bachelor thesis considered respectively 62% of them, 17% point out graduation exam. Empirical works prefer a 52%, and theoretical 48% respectively. The difference of statements between graduates of both types of higher schools is statistically significant. Conclusions: Students preferences are primarily determined by scientific interests and research achievements of the promoters of their theses, and are related to the internal regulations of higher schools.

Keywords: Burnout, Development, Education, Educational Standards, European Qualifications Framework, History, Methodology, Physical Education Teachers’ Competences, Questionnaire, Research, Scientometrics, Students, Teachers, University, Writing

? Barczynski, B.J. and Rek, M. (2011), Evaluation in science - Index Copernicus case study of multi-parametric evaluation system. *Archives of Budo*, **7** (2), 93-103.

Full Text: [2011\Arc Bud7, 93.pdf](2011/Arc%20Bud7,%2093.pdf)

Abstract: The essential part of rational administration of science is the evaluation of academic and scientific institutions activity, subsidized by public funds, which should be conducted in the form of assessment of researchers and academic institutes as well as the appraisal of programs and research projects along with currently conducted academic policy and innovative strategies. It should be performed on every administrative level in a systematic, reliable and objective way in order to estimate the value of public intervention in relation to previously determined aims and criteria. In this context, Index Copernicus provides an interactive system that combines different information areas useful to academic level researchers, administration units, information providers, librarians, journal editors, scientific institutions, universities, government agencies and industry. An information-based scientific system that utilizes a web-based communication platform to provide lifelong documentation of scientific and profession achievements of the scientific communities world-wide, promote exchange of information and collaboration between the scientists, and provides a qualitative evaluation of the scientific performance.

Keywords: Assessment, Collaboration, Documentation, Education, Evaluation, Grant Management Kit, Index Copernicus, Information, Institutions Index Copernicus, Journal, Journal Editors, Journals, Journals Master List, Patent, Policy, Publishers Panel, Ranking, Research, Scientists Index Copernicus, Scientometrics, Sports Science, Virtual Research Groups

? Pérez-Gutiérrez, M., Gutiérrez-García, C. and Escobar-Molina, R. (2011), Terminological recommendations for improving the visibility of scientific literature on martial arts and combat sports. *Archives of Budo*, **7** (3), 159-166.

Full Text: [2011\Arc Bud7, 159.pdf](2011/Arc%20Bud7,%20159.pdf)

Abstract: Background and Study Aim: Martial Arts and Combat Sports (MA&CS) terminology is diverse and heterogeneous, limiting the research visibility and information retrieval. This study points out the different terms related to MA&CS names included in the scientific literature. From this basis, a set of recommendations are offered for improving publication visibility. Material/Methods: Web of Science (WOS) databases SCI-EXPANDED, SSCI, A&HCI for the period 2000-2009 were used for generating the data. A list of 278 searching terms was compiled, each of them enter individually in WOS databases. Results were collected in reference management software and filtered manually. Statistical analysis was focused on precision, noise factor, recall and snobbery ratio indexes. Results: As far as 53.2% searching terms showed no result, 14.0% obtained some result but not related to MA&CS, and 32.7% showed results related to MA&CS. Specific terminology is quite standardized, although there are some MA&CS showing different names. Generally, a preferred and most common term is used by authors. Precision values vary between 1 and 0.02 (noise factor values vary inversely) while recall values vary between 1 and 0.04 (snobbery ratio values vary inversely). Conclusions: MA&CS terminology used in scientific literature is quite varied and can cause diverse problems and slow down researcher’s bibliographic data collection. Romanization, popularization of some terms, names given to MA&CS by different organizations and terms syllable separation are the main problems for the lack of standardized terms in this area of knowledge. A group of seven recommendations are provided for enhancing the visibility of MA&CS researches.

Keywords: Analysis, Authors, Bibliographic, Data Collection, Databases, Documentary Analysis, Indexes, Indexing, Information, Information Retrieval, Information-Retrieval, Knowledge, Literature, Management, Noise, Points, Precision, Publication, Ratio, Research, Research Performance, Science, Scientific Databases, Software, Sports, SSCI, Visibility, Web of Science

# Title: Archives of Dermatology

Full Journal Title: [Archives of Dermatology](http://archderm.ama-assn.org/contents-by-date.0.dtl)

ISO Abbreviated Title: Arch. Dermatol.

JCR Abbreviated Title: Arch Dermatol

ISSN: 0003-987X

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Medical Assoc

Publisher Address: 515 N State St, Chicago, IL 60610

Subject Categories:

Dermatology & Venereal Diseases: Impact Factor 2.714,/(2001)

? Woods, S.M., Peters, H.A. and Johnson, S.A.M. (1961), Chelation therapy in cutaneous porphyria. *Archives of Dermatology*, **84** (6), 920-927.

Full Text: 1961\Arc Der84, 920.pdf

Arndt, K.A. (1992), Information excess in medicine: Overview, relevance to dermatology, and strategies for coping. *Archives of Dermatology*, **128** (9), 1249-1256.

Full Text: 1992\Arc Der128, 1249.pdf

Abstract: Background.-The amount of biomedical information contained in scientific journals has grown to the point that complete coverage of this material is impossible. The number of articles and journals being published has been growing at an exponential rate since 1750. Thirty-four thousand references from 4000 journals are added each month to the National Library of Medicine MEDLINE database from among the more than 100 000 scientific journals now published. This increase in scientific literature reflects not greater productivity but simply a larger number of scientists at work. Most articles written are eventually published in the medical literature, but a large number of scientific articles are of less than optimal quality, and most scientific articles that are published are never cited. Articles of higher quality and usefulness cluster in a few journals that enjoy great use in medical libraries and high scores on bibliometric scores such as the Science Citation Index.

Observations.-To assess the reading habits of dermatologic trainees and evaluate how they cope with this information excess, a survey was distributed to 36 residents in three training programs. The average number of medical journal reading hours per month was 17; the number of hours devoted to reading issues of the Archives of Dermatology, the Journal of the American Academy of Dermatology, and the Journal of Investigative Dermatology were 3.2, 5.0, and 1.4, respectively; and the average resident read seven peer-reviewed journals, two to four dermatologic tabloids, and four peer-reviewed medical journals.

Conclusions.-Critically and consistently reading a limited number of high-quality peer-reviewed journals as well as taking advantage of information available through computer networks and bibliographic and full-text databases is the best approach to coping with the volume of medical literature. Translating this information into a change in attitude and modification of physician behavior is best accomplished when local role models incorporate new ideas into their practice and teaching. Modifications that would, in fact, bring about truly useful changes, such as decreasing the number of new publications, melding journals already present into smaller numbers of publications rather than instituting new journals, altering the “publish-or-perish” rules, and writing more comprehensive articles rather than multiple small contributions, all await fundamental alterations in long-accepted policies in medicine.

Keywords: Consensus, Physicians, Knowledge, American, Journals, Trends

Dubin, D., Häfner, A.W. and Arndt, K.A. (1993), Citation-classics in clinical dermatological journals: Citation analysis, biomedical journals, and landmark articles, 1945-1990. *Archives of Dermatology*, **129** (9), 1121-1129.

Full Text: 1993\Arc Der129, 1121.pdf

Abstract: Background and Design: Analysis of the most frequently cited dermatology articles and the journals in which they appear identifies and emphasizes the impact of works of colleagues and predecessors, recognizes key advances in cutaneous medicine and surgery, and adds useful data about historical developments in dermatology. Use of citation analysis to examine the dermatologic literature reveals quantitative information about authors, articles, and journals helpful in identifying classic works and high-impact journals. We analyze the characteristics of all dermatology articles cited 100 or more times in one of the 10 most highly ranked clinical dermatology journals as indicated by the Institute of Scientific Information (Philadelphia, Pa) database from 1945 through 1990 and also discuss the standard and, as well, more recently described bibliometic indexes for dermatologic journals.

Results: Thirty-one institutions located in 11 different countries produced 129 landmark articles. Ninety-two percent of the citation classics originated in the United States, United Kingdom, Sweden, and Germany. There were 16 authors with three or more top-cited articles. Fifty-two percent of the articles were of the clinical type, 22% were clinical review articles, and 26% discussed basic science topics. The mean number of authors has increased gradually over the past 80 years. The average classic article was published in 1969, peaked in popularity 9 years later with 26 peer citations, and received only 11 citations in 1990.

Conclusions: Citation frequency and citation analysis reveal useful and interesting information about scientific communication. The data on citation classics we describe can be interpreted in many ways, but certainly reflects the attention that articles have received over the past 48 years. The half-life of the average citation classic of about 10 years reflects the rapid pace of advances in the science and practice of dermatology over the past several decades. This information, along with current bibliometric indexes, may assist physicians in optimizing the time they spend reading the medical literature.

Keywords: Advances, Analysis, Attention, Authors, Bibliometric, Bibliometric Indexes, Characteristics, Citation, Citation Analysis, Citation Classics, Citations, Clinical, Communication, Data, Database, Germany, Half-Life, Impact, Indexes, Information, Institutions, Journals, Literature, Medical, Medical Literature, Medicine, Peer, Physicians, Practice, Rapid, Reading, Review, Science, Scientific Communication, Standard, Surgery, Sweden, Time, United Kingdom, United States

? Stern, R.S. and Arndt, K.A. (1999), Top cited authors in dermatology - A citation study from 24 journals: 1982-1996. *Archives of Dermatology*, **135** (3), 299-302.

Full Text: [1999\Arc Der135, 299.pdf](1999/Arc%20Der135,%20299.pdf)

Abstract: Background: One measure of the impact of a medical article is how often it is cited in other articles. Many authors of articles published in dermatologic journals are seldom, if ever, cited while other authors are often cited. Objective: To identify the 25 authors whose publications in the dermatology literature were most often cited. Design: We obtained a citation database from the Institute for Scientific Information. From this database we separately quantified the total number of citations for each author and the total number of citations to first authors of original articles. Setting: Dermatology journals. Subjects: All authors of papers published in 24 dermatology journals between 1981 and 1996. Intervention: None. Main Outcome Measure: Number of citations. Results: If all articles irrespective of the author’s listing (eg, first or second) are counted, the top 25 cited authors in the dermatology literature from 1981 to 1996 were cited between 1480 and 4706 times. If only citations and articles of which an author was the first listed author are counted, the top 25 authors were cited between 400 and 813 times. Only 4 authors were among the top 25 cited authors by both criteria. Conclusions: A relatively small proportion of all authors account for a high proportion of all citations of the dermatologic literature. The most frequently cited first authors of original articles were different in 84% of cases from the most often cited authors of all papers irrespective of the individuals placement in the authorship listing.

Keywords: Citation, Citations, Impact

? Dubin, D.B. and Arndt, K.A. (1997), The homelands of top-cited articles. *Archives of Dermatology*, **133** (1), 21-22

Full Text: 1997\Arc Der133, 21.pdf

? Stern, R.S. and Arndt, K.A. (1999), Classic and near-classic articles in the dermatologic literature. *Archives of Dermatology*, **135** (8), 948-950.

Full Text: [1999\Arc Der135, 948.pdf](1999/Arc%20Der135,%20948.pdf)

Abstract: Background: Only a small fraction of articles published in the dermatologic literature are cited frequently. Articles cited at least 100 times are known as “citation classics” and have been previously discussed. The nature of dermatologic articles cited fewer than 100 times but still much more frequently cited than average has not been clearly elucidated. Objective: To identify the source, authorship, and citation history of original articles published in 24 dermatologic journals that were cited more than 25 times. Design: We analyzed a citation database provided by the Institute for Scientific Information. We identified the journal of publication, authorship, and country of authorship for all original articles cited at least 25 times and published from 1982 to 1996 in 24 dermatologic journals. Main Outcome Measure: Source of most frequently cited dermatologic articles. Results: Only 2139 (6.45%) of all original articles were cited more than 25 times. Articles published in 4 of 24 journals accounted for the most frequently cited articles. Only 18 (0.13%) of more than 13 500 first authors published at least 5 articles that were cited more than 25 times. Conclusions: Few articles are cited at least 25 times, and few persons are first authors of multiple articles in the dermatologic literature cited at least that frequently.

? Stern, R.S. and Arndt, K.A. (2000), Top-cited dermatology authors publishing in 5 “high-impact” general medical journals. *Archives of Dermatology*, **136** (3), 357-361.

Full Text: [2000\Arc Der136, 357.pdf](2000/Arc%20Der136,%20357.pdf)

Abstract: Background: In addition to publishing in the dermatologic literature, some dermatologists also publish articles in the general medical journals, which enjoy wide circulation and whose articles are often cited. Objective: To identify articles and citations to these articles that the most frequently cited authors in the dermatologic literature published in highly cited general medical journals. Design: We obtained a citation database from the Institute of Scientific Information, Philadelphia, Pa, that identified all articles published by the top-cited authors in the dermatologic literature in 5 “high-impact” general medical journals. Setting: The 5 high-impact general medical journals with the historically highest impact factors. Subjects: Two hundred top-cited authors in dermatology journals and their coauthors. Main Outcome Measure: Number of citations to articles published in 5 high-impact general medical journals. Results: From 1981 to 1998, 120 of the 200 top-cited dermatology authors published a total of 674 papers in the 5 most highly cited general medical journals. Original articles published in these high-impact general medical journals were cited an average 7.5 times more often than articles published in dermatology journals. Conclusions: Top-cited authors in dermatology journals also frequently publish in the leading 5 high-impact general medical journals. Publications in these journals by dermatologists are often highly cited.

Keywords: Citation, Citations, Medical Journals

? Levin, C. and Maibach, H. (2002), Exploration of “alternative” and “natural” drugs in dermatology. *Archives of Dermatology*, **138** (2), 207-211.

Full Text: [2002\Arc Der138, 207.pdf](2002/Arc%20Der138,%20207.pdf)

Abstract: Objective: To review some of the promising natural remedies within dermatology to explore their potential clinical benefit in supplementing conventional drugs. Data Sources: MEDLINE searches from January 1966 through October 2000 and Science Citation Index searches from January 1974 through October 2000 were conducted, Study Selection: Primary importance was given to in vivo and in vitro controlled studies, the results of which encourage further exploration. Data Extraction: The controls used, the statistical approach to analysis, and the validity of the experimental method analyzed were considered particularly important. Data were independently extracted by multiple observers. Data Synthesis: Natural remedies seem promising in treating a wide variety of dermatologic disorders, including inflammation, phototoxicity, psoriasis, atopic dermatitis, alopecia areata, and poison oak. Conclusions: The alternative medications presented seem promising, although their true effects are unknown. Many of the presented studies do not allow deduction of clinical effects. Further experimentation must be performed to assess clinical benefit.

Keywords: Alopecia-Areata, Analysis, Atopic Eczema, Benzoyl Peroxide, Citation, Clinical Status, Controlled Studies, Drugs, Evening Primrose Oil, Experimental, Extraction, Fatty-Acid Composition, Gamma-Linolenic Acid, Green Tea, In Vivo, Inflammation, Medline, Natural, Primary, Randomized Trial, Review, Science, Science Citation Index, Selection, Sources, Statistical, Synthesis, Validity, Vitamin-C

? Robinson, J.K. and Callen, J.P. (2010), The best of the best: A new section led by Henry W. Lim, MD. *Archives of Dermatology*, **146** (5), 554.

Full Text: [2010\Arc Der146, 554.pdf](2010/Arc%20Der146,%20554.pdf)

? Carney, C.K. and Elewski, B.E. (2010), Top-accessed article: White superficial onychomycosis. *Archives of Dermatology*, **146** (5), 554.

Full Text: [2010\Arc Der146, 554.pdf](2010/Arc%20Der146,%20554.pdf)

? Zhao, Y.E., Wu, L.P., Peng, Y. and Cheng, H. (2010), Retrospective analysis of the association between *Demodex* infestation and rosacea. *Archives of Dermatology*, **146** (8), 896-902.

Full Text: [2010\Arc Der146, 896.pdf](2010/Arc%20Der146,%20896.pdf)

Abstract: Objectives: To explore the association between Demodex infestation and rosacea and the pathogenesis of demodicosis rosacea by means of a meta-analysis. Data Sources: Electronic searches of the ISI Web of Knowledge (Science Citation Index, ISTP [Index to Scientific & Technical Proceedings], Journal Citation Reports, BP [BIOSIS Preview], INSPEC [Ination Service in Physics, Electronics Technology, and Computer and Control], and DII [Derwent Innovation Index]), MEDLINE, and CNKI (China National Knowledge Infrastructure) databases (January 1, 1950, to December 31, 2009). We also performed hand searches of reference lists and conference proceedings. Study Selection: Predefined selection criteria were applied to all published case-control studies that analyzed the association between Demodex infestation and rosacea. Data Extraction: Two of us independently extracted data from the included studies. For disputed articles, a third party mediated whether to include the study. Data Synthesis: Forty-eight English- and Chinese-language articles, which covered 10 different countries and 28 527 participants, were eligible. The pooled odds ratio in random-effects models is 7.57 (95% confidence interval, 5.39-10.62). Stability is good according to sensitivity analysis. The fail-safe number is 18 456 in the quantitative analysis of publication bias. Conclusions: A significant association exists between Demodex infestation and the development of rosacea. Demodex infestation is a vital risk factor for rosacea according to the time-to-event relationship, and the degree of infestation played a more important role than did the mite infestation rate in the development of rosacea.

Keywords: Acne Rosacea, Citation, Demodicosis, Density, Folliculorum, ISI, Pathogenesis, Population, Publication

# Title: Archives of Dermatology and Syphilology

Full Journal Title: Archives of Dermatology and Syphilology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? McCafferty, L.K. (1926), Hair dyes and their toxic effects - Classification and description. *Archives of Dermatology and Syphilology*, **14** (2), 136-144.

Full Text: Arc Der Syp14, 136

# Title: Archives of Disease in Childhood

Full Journal Title: [Archives of Disease in Childhood](http://www.swetswise.com/eAccess/viewTitleIssues.do?titleID=15302)

ISO Abbreviated Title: Arch. Dis. Child.

JCR Abbreviated Title: Arch Dis Child

ISSN: 0003-9888

Issues/Year: 12

Journal Country/Territory: England

Language: English

Publisher: British Med Journal Publ Group

Publisher Address: British Med Assoc House, Tavistock Square, London WC1H 9JR, England

Subject Categories:

Pediatrics: Impact Factor

? Vanapruks, V. and Prapaitrakul, K. (1989), Water-intoxication and hyponatremic convulsions in neonates. *Archives of Disease in Childhood*, **64** (5), 734-735.

Ozgür, S., Sümer, H. and Koçoğlu, G. (1996), Rickets and soil strontium. *Archives of Disease in Childhood*, **75** (6), 524-526.

Abstract: The subjects of this study were children aged 6-60 months living in villages in the Ulas Health Region, Sivas. The villages were divided into two groups according to the amount of strontium in the soil: region 1, > 350 ppm, 650 children; region 2, < 350 ppm, 1596 children. Overall, the prevalence of one or more clinical signs of rickets was 22.9%. The prevalence in region 1 was 31.5% and that in region 2, 19.5%. These values were significantly different (p < 0.001). When other variables which may be relevant to the occurrence of rickets were taken into account, the difference in prevalence persisted. The results suggest that in villages where nutrition is mainly based on grain cereals the presence of strontium in the soil will increase the prevalence of rickets significantly. As a preventive measure, a greater proportion of the foods given to children in these villages should be derived from animal origin, and cereals and drinking water supplies should be obtained from villages with a low soil strontium content, or calcium supplements should be given.

Keywords: Rickets, Strontium, Diet

? Kenny, S.E., Shankar, K.R., Rintala, R., Lamont, G.L. and Lloyd, D.A. (1997), Evidence-based surgery: Interventions in a regional paediatric surgical unit. *Archives of Disease in Childhood*, **76** (1), 50-53.

Full Text: Arc Dis Chi76, 50.pdf

Abstract: Objectives-To determine the proportion of paediatric surgical interventions that are evidence-based and to identify areas where randomised controlled trials (RCTs) or further research are required. Design-Prospective review of paediatric general surgical inpatients. Setting-A regional paediatric surgical unit. Subjects-All consecutive paediatric general surgical patients admitted in November, 1995. Main outcome measures-Each patient on whom a diagnosis had been made was allocated a primary diagnosis and primary intervention (n=281). On the basis of expert knowledge, Plusnet Medline, and ISI Science Citation database searches, each intervention was categorised according to the level of supporting evidence: category 1, intervention based on RCT evidence; category 2, intervention with convincing non-experimental evidence such that an RCT would be unethical and unjustified; category 3, intervention without substantial supportive evidence. Results-Of 281 patient interventions, 31 (11%) were based on controlled trials and 185 (66%) on convincing nonexperimental evidence. Only 23% of interventions were category 3. Conclusions-In common with other medical specialties, the majority of paediatric surgical interventions are based on sound evidence. However, only 11% of interventions are based on RCT data, perhaps reflecting the nature of surgical practice. Further RCTs or research is indicated in a proportion of category 3 interventions.

Keywords: Cholecystectomy, Citation, Database, Diagnosis, Endoscopic Sclerotherapy, Esophageal-Varices, Evidence-Based Medicine, Injection Sclerotherapy, Intervention, ISI, Knowledge, Liver-Cirrhosis, Management, Medical, Medline, Paediatric Surgery, Pilonidal-Sinus, Primary, Prospective Controlled Trial, Randomized Trial, Research, Review, Science, Surgery, Testicular Torsion

Ng, P.C., So, K.W., Leung, T.F., Cheng, F.W.T., Lyon, D.J., Wong, W., Cheung, K.L., Fung, K.S.C., Lee, C.H., Li, A.M., Hon, K.L.E., Li, C.K. and Fok, T.F. (2003), Infection control for SARS in a tertiary neonatal centre. *Archives of Disease in Childhood*, **88** (5), F405-F409.

Full Text: [A\Arc Dis Chi88, F405.pdf](A/Arc%20Dis%20Chi88,%20F405.pdf)

The Severe Acute Respiratory Syndrome (SARS) is a newly discovered infectious disease caused by a novel coronavirus, which can readily spread in the healthcare setting. A recent community outbreak in Hong Kong infected a significant number of pregnant women who subsequently required emergency caesarean section for deteriorating maternal condition and respiratory failure. As no neonatal clinician has any experience in looking after these high risk infants, stringent infection control measures for prevention of cross infection between patients and staff are important to safeguard the wellbeing of the work force and to avoid nosocomial spread of SARS within the neonatal unit. This article describes the infection control and patient triage policy of the neonatal unit at the Prince of Wales Hospital, Hong Kong. We hope this information is useful in helping other units to formulate their own infection control plans according to their own unit configuration and clinical needs.

Vargas-Origel, A., Gómez-Martínez, G. and Vargas-Nieto, M.A. (2001), The accuracy of references in paediatric journals. *Archives of Disease in Childhood*, **85** (6), 497-498.

Full Text: [2001\Arc Dis Chi85, 497.pdf](2001/Arc%20Dis%20Chi85,%20497.pdf)

Abstract: We analysed the reference error rate of four paediatric journals. The overall rate was 29.7%. Individual rates were as follows: Acta Paediatr 36%, Arch Dis Child 22%, J Pediatr 29%, Pediatrics 32%; the rate of major errors was 1%, 1%, 2%, and 4%, respectively.

Keywords: Accuracy, Reference, Journal

? Rudolf, M.C.J. and Logan, S. (2005), What is the long term outcome for children who fail to thrive? A systematic review. *Archives of Disease in Childhood*, **90** (9), 925-931.

Abstract: Aims: To ascertain the long term outcomes in children diagnosed as having failure to thrive (FTT). Methods: Systematic review of cohort studies. Medline, Psychinfo, EMBASE, Cinahl, Web of Science, Cochrane, and DARE databases were searched for potentially relevant studies. Inclusion criteria: cohort studies or randomised controlled trials in children < 2 years old with failure to thrive defined as weight < 10th centile or lower centile and/or weight velocity < 10th centile, with growth, development, or behaviour measured at 3 years of age or older. Results: Thirteen studies met the inclusion criteria; eight included a comparison group, of which five included children identified in community settings. Two were randomised controlled trials. Attrition rates were 10-30%. Data from population based studies with comparison groups and which reported comparable outcomes in an appropriate form were pooled in a random effects meta-analysis. Four studies report IQ scores at follow up and the pooled standardised mean difference was 20.22 (95% CI -0.41 to -0.03). Two studies reported growth data as standard deviation scores. Their pooled weighted mean difference for weight was -1.24 SDS (95% CI -2.00 to -0.48), and for height -0.87 SDS (95% CI -1.47 to -0.28). No studies corrected for parental height, but two reported that parents of index children were shorter. Conclusions: The IQ difference (equivalent to similar to 3 IQ points) is of questionable clinical significance. The height and weight differences are larger, but few children were below the 3rd centile at follow up. It is unclear to what extent observed differences reflect causal relations or confounding due to other variables. In the light of these results the aggressive approach to identification and management of failure to thrive needs reassessing.

Keywords: Children, Cochrane, Cognitive-Development, Cohort Studies, Confounding, Databases, Development, Developmental Sequelae, Early Histories, Follow-up, Health Visitor Intervention, Home Intervention, Management, Meta-Analysis, Methods, Nonorganic Failure, Outcome, Outcomes, Parents, Points, Preschool-Children, Randomized Controlled-Trial, Review, Science, Systematic, Systematic Review, To-Thrive, Web of Science

? Kendrick, D., Smith, S., Sutton, A., Watson, M., Coupland, C., Mulvaney, C. and Mason-Jones, A. (2008), Effect of education and safety equipment on poisoning-prevention practices and poisoning: systematic review, meta-analysis and meta-regression. *Archives of Disease in Childhood*, **93** (7), 599-608.

Abstract: Objective: To assess (a) the effect of home safety education and the provision of safety equipment on poison-prevention practices and poisoning rates, and (b) whether the effect of interventions differs by social group. Data sources: Medline, EMBASE, Cinahl, ASSIA, Psychinfo, Web of Science, plus other electronic sources and hand searching of conference abstracts and reference lists. Authors of included studies were asked to supply individual participant data. Review methods: Randomised controlled trials, non-randomised controlled trials and controlled before-and-after studies, with participants aged (19 years, providing home safety education with or without free or subsidised safety equipment and reporting poison-prevention practices or poisoning incidents were included. Pooled odds ratios and pooled rate ratios were estimated, and meta-regression estimated intervention effects by child age, gender and social variables. Results: Home safety interventions increased safe storage of medicines (OR 1.57, 95% CI 1.22 to 2.02) and cleaning products (OR 1.63, 95% CI 1.22 to 2.17), the possession of syrup of ipecac (OR 3.34, 95% CI 1.50 to 7.41), and having poison control centre numbers accessible (OR 3.67, 95% CI 1.84 to 7.33). There was a lack of evidence on poisoning rates (rate ratio 1.03, 95% CI 0.78 to 1.36) and no consistent evidence that intervention effects differed by child age, gender or social group. Conclusions: Home safety education and the provision of safety equipment improve poison-prevention practices, but the impact on poisoning rates is unclear. Such interventions are unlikely to widen inequalities in childhood poisoning-prevention practices.

Keywords: Aged, Child, Childhood, Children, Community, Control, Education, Families, Gender, Home, Impact, Injury, Intervention, Interventions, Meta-Analysis, Multicenter Survey, Primary-Care, Randomized Controlled-Trial, Ratio, Review, Safety, Science, Social, Systematic, Systematic Review, Web of Science

?Louwers, E.C.F.M., Affourtit, M.J., Moll, H.A., de Koning, H.J. and Korfage, I.J. (2010), Screening for child abuse at emergency departments: A systematic review. *Archives of Disease in Childhood*, **95** (3), 214-218.

Abstract: Introduction Child abuse is a serious problem worldwide and can be difficult to detect. Although children who experience the consequences of abuse will probably be treated at an emergency department, detection rates of child abuse at emergency departments remain low. Objective To identify effective interventions applied at emergency departments that significantly increase the detection rate of confirmed cases of child abuse. Design This review was carried out according to the Cochrane Handbook. Two reviewers individually searched PUBMED, the Cochrane Library, EMBASE, Web of Science and CINAHL for papers that met the inclusion criteria. Results Fifteen papers describing interventions were selected and reviewed; four of these were finally included and assessed for quality. In these studies the intervention consisted of a checklist of indicators of risk for child abuse. After implementation, the rate of detected cases of suspected child abuse increased by 180% (weighted mean in three studies). The number of confirmed cases of child abuse, reported in two out of four studies, showed no significant increase. Conclusions Interventions at emergency departments to increase the detection rate of cases of confirmed child abuse are scarce in the literature. Past study numbers and methodology have been inadequate to show conclusive evidence on effectiveness.

Keywords: Accident, Audit, Burns, Child, Children, Cochrane, Effective Interventions, Effectiveness, EMBASE, Emergency Department, Intervention, Interventions, Literature, Maltreatment, Methodology, Neglect, Papers, Pediatric Emergency, Protection Procedures, PUBMED, Review, Risk, Science, Systematic, Systematic Review, Web of Science

# Title: Archives of Disease in Childhood-Fetal and Neonatal Edition

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? Hartling, L., Liang, Y.Y. and Lacaze-Masmonteil, T. (2012), Chorioamnionitis as a risk factor for bronchopulmonary dysplasia: A systematic review and meta-analysis. *Archives of Disease in Childhood-Fetal and Neonatal Edition*, **97** (1), F8-U14.

Full Text: [2012\Arc Dis Chi-Fet Neo Edi97, F8.pdf](2012/Arc%20Dis%20Chi-Fet%20Neo%20Edi97,%20F8.pdf)

Abstract: Objective To conduct a systematic review of the association between chorioamnionitis (CA) and bronchopulmonary dysplasia (BPD) in preterm infants. Methods The authors searched Medline, Embase, CINAHL, Science Citation Index and PubMed, reviewed reference lists and contacted the primary authors of relevant studies. Studies were included if they had a comparison group, examined preterm or low birthweight infants, and provided primary data. Two reviewers independently screened the search results, applied inclusion criteria and assessed methodological quality. One reviewer extracted data and a second reviewer checked data extraction. Studies were combined with an OR using a random effects model. Meta-regression was used to explore potential confounders. Results 3587 studies were identified; 59 studies (15 295 patients) were included. The pooled unadjusted OR showed that CA was significantly associated with BPD (OR 1.89, 95% CI 1.56 to 2.3). Heterogeneity was substantial (I(2)=66.2%) and may be partially explained by the type of CA. Infants exposed to CA were significantly younger and lighter at birth. The pooled adjusted OR was 1.58 (95% CI 1.11 to 2.24); heterogeneity was substantial (I(2)=65.1%) which may be due to different variables being controlled in each study. There was strong evidence of publication bias which suggests potential overestimation of the measure of association between CA and BPD. Conclusions Unadjusted and adjusted analyses showed that CA was significantly associated with BPD; however, the adjusted results were more conservative in the magnitude of association. The authors found strong evidence of publication bias. Despite a large body of evidence, CA cannot be definitively considered a risk factor for BPD.

Keywords: Association, Authors, Bias, Birth-Weight Infants, Birthweight, Chronic Lung-Disease, Citation, Cord Blood, Early Adrenal Insufficiency, Extraction, Fetal Inflammatory Response, Infants, Low, Low Birthweight, Medline, Meta Analysis, Meta-Analysis, Methods, Model, Neonatal Leukemoid Reaction, Patients, Premature-Infants, Preterm, Preterm Infants, Primary, Publication, Publication Bias, Pubmed, Quality, Review, Risk, Risk Factor, Science, Science Citation Index, Systematic, Systematic Review, Ureaplasma-Urealyticum

# Title: Archives of Environmental Contamination and Toxicology

Full Journal Title: [Archives of Environmental Contamination and Toxicology](http://springerlink.metapress.com/app/home/journal.asp?wasp=1b22a8h10g6jqg5f49fm&referrer=parent&backto=searchpublicationsresults,1,1;); [Archives of Environmental Contamination and Toxicology](http://www.environmental-center.com/magazine/springer/00244/)

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Environmental Sciences: Impact Factor 1.173, 37/126 (1999); Impact Factor 1.437, 25/127 (2000); Impact Factor, 11/129 (2001); Impact Factor 1.612, 34/134 (2004); Impact Factor 1.408, 53/140 (2005); Impact Factor 1.743, 74/181 (2009)

Toxicology: Impact Factor 1.173, 38/74; Impact Factor, 5/78 (2001); Impact Factor 1.612, 39/74 (2004); Impact Factor 1.408, 51/75 (2005); Impact Factor 1.743, 52/77 (2009)

? Baird, R.B., Kuo, C.L., Shapiro, J.S. and Yanko, W.A. (1974), The rate of phenolics in wastewater: Determination by direct-injection GLC and Warburg respirometry. *Archives of Environmental Contamination and Toxicology*, **2** (2), 165-178.

Full Text: [1960-80\Arc Env Con Tox2, 165.pdf](1960-80/Arc%20Env%20Con%20Tox2,%20165.pdf)

Abstract: The effects of phenol, cresol isomers, and chlorinated phenols on the respiration of activated sludges have been studied using Warburg techniques. The biodegradability of these materials under simulated treatment conditions in activated sludge was also determined. It was found that less than 10 mg/l concentrations of phenol and chlorophenols, while being biodegraded, proved toxic to sludges unacclimated to phenolics. The toxic effects of the cresols were not so severe for the sludges tested. Phenolic analysis in these studies was accomplished employing GLC techniques with a new column packing, dinonylphthalate on Chromosorb G. This chromatographic technique was shown to be effective in rapidly identifying phenolic materials in activated sludge, treatment plant effluents, and industrial discharges: the separation of all isomers tested, except m- and p chlorophenol, was possible using this technique.

? Mumma, R.O., Raupach, D.C., Sahadewan, K., Manos, C.G., Rutzke, M., Kuntz, H.T., Bache, C.A. and Lisk, D.J. (1990), National survey of elements and radioactivity in municipal incinerator ashes. *Archives of Environmental Contamination and Toxicology*, **19** (3), 399-404.

Full Text: [1990\Arc Env Con Tox19, 399.pdf](1990/Arc%20Env%20Con%20Tox19,%20399.pdf)

Abstract. An analytical survey of fly ashes, bottom ashes and mixtures of the two for 36 elements, soluble salts and radioactivity was conducted. The ashes were taken from approximately one-fourth of the municipal solid waste incinerators presently operating in the United States. The concentrations of a number of toxic elements such as As, Cd, Cr, Cu, Hg, Ni, Pb, Sb, and Zn in specific ashes were high. The levels of radioactivity were not significant from a health standpoint. A number of ashes were exceedingly high in organic matter, indicating grossly inadequate conditions during incineration. Soluble salt content was appreciable in the ashes. The possible sources of elements in refuse and their behavior and fate during refuse incineration are discussed with respect to their chemical forms and properties and incinerator operating parameters. Variability of metal concentrations in ash with time of sampling and their solubilization in landfills are also considered.

? Jahan Parwar, B., Wood, L.W. and Bush, B. (1990), Assimilation of polychlorinated biphenyls by a marine mollusc and comparison with a rat. *Archives of Environmental Contamination and Toxicology*, **19** (6), 944-951.

Full Text: [1990\Arc Env Con Tox19, 944.pdf](1990/Arc%20Env%20Con%20Tox19,%20944.pdf)

Abstract: The marine mollusc Aplysia californica was fed seaweed Rhodymenia palmata contaminated with polychlorinated biphenyls (PCBs) at a high (experimental) and low (control) level for a period of 18 days in flow-through systems which limited the animals to dietary uptake. The assimilation of PCBs, determined by subtraction of fecal output from food intake, was greater at the high dosage (94±29%) than at the low dosage (84±22%). Assimilation selectivity of the different congeners favored those with lower chlorine content, and discriminated against those chlorinated in the para position on one of the rings. After assimilation, selectivity for incorporation into the hepatopancreas favored those congeners with higher chlorine contents over those with but 1 to 3 chlorines on the molecule. Similarities between incorporation into the liver of rats and into the hepatopancreas of Aplysia were found, suggesting that common mechanisms for bioaccumulation, and by extension, physiological effects, may be present in such diverse species of the animal kingdom.

? Bache, C.A., Gutenmann, W.H., Rutzke, M., Chu, G., Elfving, D.C. and Lisk, D.J. (1991), Concentrations of metals in grasses in the vicinity of a municipal refuse incinerator. *Archives of Environmental Contamination and Toxicology*, **20** (4), 538-542.

Full Text: [1991\Arc Env Con Tox20, 538.pdf](1991/Arc%20Env%20Con%20Tox20,%20538.pdf)

Abstract. There is currently much public opposition to the construction of municipal refuse incinerators in the United States owing to health concerns about emitted toxicants. In this study, 19 elements and polychlorinated biphenyls (PCBs) were determined in grasses sampled upwind and downwind from a municipal refuse incinerator which had no emission control devices. Concentrations of Cd, Mo, Hg, Zn, Fe, and Pb were generally highest immediately adjacent to the incinerator. Foliar concentration of the metals, Cd, Mo, Zn, Fe, and Pb was inversely related to the logarithm of the distance downwind from the incinerator. Foliar concentration of Hg decreased linearly with distance downwind. Polychlorinated biphenyls were not detectable in any of the grass samples possibly due to their thermal destruction during incineration or greater dispersion because of their higher vapor pressure. The metal concentration in plants in the vicinity of such incinerators will be affected by the composition of the refuse, incinerator design and stack height, combustion operating conditions, emission control devices, the nature of the plant surface, the water solubility of deposited metal-containing particulates, prevailing weather conditions and root uptake of such metals by plants.

? Kuroda, K., Young, Y.S., Okamoto, A., Fukushima, M. and Endo, G. (1991), Enhancement of mutagenicity of 1-nitropyrene by water as a diluent. *Archives of Environmental Contamination and Toxicology*, **21** (1), 58-61.

Full Text: [1991\Arc Env Con Tox21, 58.pdf](1991/Arc%20Env%20Con%20Tox21,%2058.pdf)

Abstract: The mutagenicity of 1-nitropyrene was strongly enhanced in the Salmonella mutagenicity test with the preincubation modification when it was dissolved in dimethylsulfoxide and diluted with water. The enhancement of mutagenicity was not found in the plate incorporation method and seemed to be common to chemicals which have low solubilities in water. The indications were that the effectiveness of preincubation modification was due to the increased absorption of test chemicals by the Salmonella cells, and that the absorption depends primarily on the solubility of test chemicals in the assay mixture.

? Tchounwou, P.B., Englande, Jr., A.J. and Malek, E.A. (1991), Toxicity evaluation of ammonium sulphate and urea to three developmental stages of freshwater snails. *Archives of Environmental Contamination and Toxicology*, **21** (3), 359-364.

Full Text: [1991\Arc Env Con Tox21, 359.pdf](1991/Arc%20Env%20Con%20Tox21,%20359.pdf)

Abstract: Studies were performed to evaluate the toxic effects of ammonium sulphate and urea (chemical fertilizers currently applied in ricelands of Cameroon) against eggs, juveniles, and adults of two species of freshwater snails (Helisoma trivolvis and Biomphalaria havanensis). Results obtained from ammonium sulphate tests indicated 24-h LC50 values of 558 mg/L and 669 mg/L for eggs; 393 mg/L and 526 mg/L for juveniles, and 701 mg/L and 657 mg/L for adults of H. trivolvis and B. havanensis, respectively. Similar analysis with urea revealed LC50 values of 14,241 mg/L and 13,532 mg/L for eggs; 18,255 mg/L and 24,504 mg/L for juveniles and 30, 060 mg/L and 26, 024 mg/L for adults of H. trivolvis and B. havanensis, respectively. Following 48 h exposure, the concentrations of ammonium sulphate killing 100% of snails were 1, 250 mg/L and 1,000 mg/L for the adults of H. trivolvis and of B. havanensis, respectively. Those of urea were computed to be 25,000 mg/L for H. trivolvis and 35,000 mg/L for B. havanensis. In rice culture in Cameroon, these fertilizers are applied at doses of 100 kg/ha (ammonium sulphate) and of 150 kg/ha (urea); hence, the above found concentrations lethal to snails appeared to be 10 to 13 times (ammonium sulphate) and to be 165 to 235 times (urea) higher assuming an average water depth of 10 cm in these ricefields. Therefore, the use of ammonium sulphate and urea as chemical fertilizers in ricelands of the Republic of Cameroon might adversely affect the survival of freshwater snails only in the case of spills or of stressful environmental conditions. Under normal laboratory conditions, both chemicals show a low molluscicidal activity with urea being about 25 to 35 times less potent than ammonium sulphate.

? Kono, K., Yoshida, Y., Watanabe, M., Tanioka, Y., Dote, T., Orita, Y., Bessho, Y., Yoshida, J., Sumi, Y. and Umebayashi, K. (1992), An experimental study on the treatment of hydrofluoric acid burns. *Archives of Environmental Contamination and Toxicology*, **22** (4), 414-418.

Full Text: [1992\Arc Env Con Tox22, 414.pdf](1992/Arc%20Env%20Con%20Tox22,%20414.pdf)

Abstract: A 20% solution of hydrofluoric acid (HF) was applied to the skin of rats and a biomedical observation of the tissues and sera was made. Flushing with running water was effective for HF burns. By applying 2.5% calcium gluconate jelly, concentrations of fluoride in the urine and the tissues surrounding the injured region were reduced. Thus, the results proved that irrigation with running water and jelly applications were evaluated as the most effective therapy among various methods tested for HF burns.

? Kuroda, K., Yamaguchi, Y. and Endo, G. (1992), Mitotic toxicity, sister chromatid exchange, and REC assay of pesticides. *Archives of Environmental Contamination and Toxicology*, **23** (1), 13-18.

Full Text: [1992\Arc Env Con Tox23, 13.pdf](1992/Arc%20Env%20Con%20Tox23,%2013.pdf)

Abstract: Genotoxicity of 10 pesticides (chlornitrofen, chlomethoxyfen, molinate, thiobencarb, simazine, simetryn, diazinon, iprofenfos, piperofos and oxadiazone) was studied by mitotic toxicity, sister chromatid exchange, and rec assay. The pesticides are detected frequently at high levels in the Yodo River water in Osaka, Japan, which is used for drinking water by thirteen million people. Mitotic toxicity was evaluated by mitotic index (MI) and second mitosis index (SI), using a Chinese hamster cell line V79. SI is the rate of twice divided metaphases in chromosome preparation for sister chromatid exchange. All the pesticides decreased the two indices dose-dependently. MI50 and SI50, the concentrations of pesticides which lowered the indices to 50% of the solvent control, was determined. The MI50 and SI50 of each pesticide were very similar, and the pesticides did not hinder cell division specifically. None of the pesticides induced more sister chromatid exchanges than 1.5 times the solvent control. Chlomethoxyfen and simazine induced sister chromatid exchanges significantly in V79 cells, but the dose dependencies were poor. Simetryn had rec effect and was concluded to have DNA damaging activity.

? Hayashi, M., Yamamoto, K., Yoshimura, M., Kishimoto, T. and Shitara, A. (1993), Effects of fasting on distribution and excretion of lead following long-term lead exposure in rats. *Archives of Environmental Contamination and Toxicology*, **24** (2), 201-205.

Full Text: [1993\Arc Env Con Tox24, 201.pdf](1993/Arc%20Env%20Con%20Tox24,%20201.pdf)

Abstract: Lead was given to rats through drinking water containing 100 ppm lead acetate for 20 days. Delta-aminolevulinic acid dehydratase (ALAD) activity in erythrocytes was significantly lower (p < 0.05) at 20 days after Pb treatment. Erythrocytic ALAD activity was significantly lower (p < 0.05) in fasted rats than in fed rats with or without Pb pretreatment. Serum glutamic pyruvic transaminase and glutamic oxaloacetic transaminase activities after 6 days of fasting were significantly higher (p < 0.05) in Pb pretreated rats than in other groups (Pb nontreated fed and fasted rats, and Pb pretreated fed rats). Long periods of fasting strongly enhanced these serum-enzymes elevations induced by lead. Maximum Pb concentrations and total amount in feces increased in rats fasted for 3 days regardless of Pb pretreatment. On the other hand, total amount of Pb in feces of rats fasted for 6 days were not significantly different from the other groups because their fecal volume decreased to about 1% of fed rats. The Pb concentrations of liver, kidney, spleen, and femur increased significantly in Pb pretreated rats compared to in controls, but there were no significant differences between the fed and fasted rats.

? Mizunuma, K., Yasugi, T., Kawai, T., Horiguchi, S. and Ikeda, M. (1993), Exposure-excretion relationship of styrene and acetone in factory workers: A comparison of a lipophilic solvent and a hydrophilic solvent. *Archives of Environmental Contamination and Toxicology*, **25** (1), 129-133.

Full Text: [1993\Arc Env Con Tox25, 129.pdf](1993/Arc%20Env%20Con%20Tox25,%20129.pdf)

Abstract: A factory survey was conducted in the second half of a working week on 41 exposed male workers, who were engaged in fiber-reinforced plastics work and exposed to the mixed vapors of styrene and acetone. Nonexposed workers, 20 men, were recruited from the same factory. Styrene and acetone in respiratory zone air were monitored for a 8-h shift with carbon cloth-and water-equipped personal diffusive samplers, respectively. Blood and urine samples were collected at the shift-end. Acetone and styrene concentrations in whole blood, serum and urine were measured by head-space gas chromatography, and phenylglyoxylic acid in urine by high-performance liquid chromatography. All biological exposure indicators analyzed correlated significantly with the intensity of exposure to the corresponding solvent during the shift. The slopes of the regression lines indicate that a very small fraction of styrene absorbed will be excreted into urine as styrene per se, and that styrene is quite effectively excreted into urine after metabolic conversion. In contrast, the slopes of regression lines for acetone suggest that acetone distributes both in the blood and urine quite evenly. When the distribution of the solvent in serum was compared with that in the whole blood, it was found that almost all of styrene in blood is present in the serum, whereas acetone distributed very evenly in the cellular and noncellular fractions of the blood.

? Macfie, S.M., Tarmohamed, Y. and Welbourn, P.M. (1994), Effects of cadmium, cobalt, copper, and nickel on growth of the green-alga Chlamydomonas reinhardtii: The influences of the cell-wall and pH. *Archives of Environmental Contamination and Toxicology*, **27** (4), 454-458.

Full Text: [1994\Arc Env Con Tox27, 454.pdf](1994/Arc%20Env%20Con%20Tox27,%20454.pdf)

Abstract: Comparative studies of the toxicity of Cd, Co, Cu, and Ni to walled (UTCC 11) and wall-less (UTCC 12) strains of Chlamydomonas reinhardtii were made in order to test the hypothesis that the cell wall affords some protection against metal toxicity. The wall-less strain was consistently more sensitive than the walled strain to all four metals, indicating that the cell wall plays a role in conferring metal tolerance. Between-strain differences were most striking for Cu and for Co. The effect of hydrogen ion concentration (pH 5 and 6.8) on metal toxicity was also determined for the two strains. Having established that both strains grew equally well at pH 5 or 7 in the absence of added metal, it was necessary to correct for the changes in metal speciation due to pH in the medium used for the tests. Speciation of each metal at each pH was determined by mathematical (GEOCHEM) modeling of the medium and the calculated free (ionic) metal concentration was used to express toxicity. In addition, the concentration of ionic metal that reduced final cell density to 30% of that in control solution (EC(30)) was used as an indicator of relative metal toxicity. For both strains, all metals were less toxic at pH 5 than at pH 7, supporting previous observations. The results are discussed in terms of the possible mechanisms by which the cell wall could protect the cell from metal toxicity, and the relevance of the results to more general considerations of metal tolerance mechanisms in plants.

Keywords: Adsorption, Binding, Culture, Heavy-Metals, Ions, Toxicity, Transport, Variabilis, Zinc

Zheng, S.Q. and Cooper, J.F. (1996), Adsorption, desorption and degradation of 3 pesticides in different soils. *Archives of Environmental Contamination and Toxicology*, **30** (1), 15-20.

Full Text: [1996\Arc Env Con Tox30, 15.pdf](1996/Arc%20Env%20Con%20Tox30,%2015.pdf)

Abstract: Adsorption, desorption and degradation of two herbicides (metolachlor and pendimethalin) and a nematicide (cadusafos) were evaluated under laboratory conditions with six soils (ferralsol, regosol andosol, fluvisol and two vertisols), selected in a tropical zone (Martinique, French West Indies) and in the Mediterranean area (Languedoc, South of France). Adsorption parameters were calculated using the Freundlich equation and desorption parameters were evaluated using a 2-compartment model corresponding to two different energy levels. Degradation rate was calculated with a first order equation. Combining values of Koc and half-life in soil, an estimation of the mobility of these pesticides in the soil was made using GUS (ground water ubiquity score). Consideration of pesticide adsorption and resistance to desorption allowed classification of these three compounds according to their mobility: pendimethalin < cadusafos < metolachlor. This classification correlates with some physico-chemical properties of the molecules (water solubility and octanol/water partition coefficient). The equations describing these relations were evaluated. Furthermore, the six soils were classified according to their tendency to adsorb the three pesticides: vertisols > ferralsol > regosol > andosol > fluvisol. Clay or sand content (and cation exchange capacity) of the soils clearly affected adsorption-desorption parameters. The degradation study in the six soils did not show significant differences, but revealed the influence of temperature. GUS values indicated that pendimethalin could be considered as a non-leacher compound and that cadusafos and metolachlor exhibit a moderate tendency to leaching.

Yeh, C.Y., Chiou, H.Y., Chen, R.Y., Yeh, K.H., Jeng, W.L. and Han, B.C. (1996), Monitoring lead pollution near a storage battery recycling plant in Taiwan, Republic of China. *Archives of Environmental Contamination and Toxicology*, **30** (2), 227-234.

Full Text: [1996\Arc Env Con Tox30, 227.pdf](1996/Arc%20Env%20Con%20Tox30,%20227.pdf)

Abstract: This study presents the distribution of blood lead levels and lead in various environmental samples (water sediments, soils and air) near the Shing-Yie storage battery recycling plant in Taiwan before (July 1990 to June 1991) and after (July 1992 to June 1993) amelioration. Before amelioration, the average blood lead levels in the neighborhood of the plant were in the range of 10.55±5.7 to 12.28±7.9 µg/dl. After amelioration, relatively lower average concentrations of blood lead (range 8.35±3.0 to 9.13±2.5 µg/dl) were generally found; however, these averages were still higher than that (7.79±3.5 µg/dl) from other lead-unpolluted areas of Taiwan. An exceedingly high geometric mean (GM) lead concentration (128 µg/L) was found in the downstream river water of the Tawulum River passing by the plant. The concentrations of lead (GM = 372 and 418 µg/g) in the downstream river sediments were higher than those (GM = 123 and 158 µg/g) in the upstream river sediments before and after amelioration, respectively. Furthermore, lead species in river sediments were analyzed by a sequential leaching technique. The sum of phases I, II and III accounted for 83.7% of total lead at station R2 (nearest to the plant). Maximum lead concentration (GM = 2402 µg/g) in dust at the soil surface from station S-1 (nearest to the plant) was much higher than those from the other stations by about 18 times before amelioration. However, the maximum value dropped to 1, 155 µg/g after amelioration. On the whole, the geometric mean concentration of lead in dust at the soil surface nearest to the plant was >1,000 µg/g and decreased to <100 µg/g in the 15-30 cm depth soil about 2 km away from the plant. Before amelioration, the geometric mean lead concentration of 4.57 µg/m3 (range 0.102-37.6 µg/m3) in the air near the plant was higher than that at the background locations, the geometric mean value of which was 0.08 µg/m3.

Green, A.S. and Chandler, G.T. (1996), Life-table evaluation of sediment-associated chlorpyrifos chronic toxicity to the benthic copepod, Amphiascus tenuiremis. *Archives of Environmental Contamination and Toxicology*, **31** (1), 77-83.

Full Text: [1996\Arc Env Con Tox31, 77.pdf](1996/Arc%20Env%20Con%20Tox31,%2077.pdf)

Abstract: A partial life-cycle experiment was conducted to assess chronic effects of sediment-associated chlorpyrifos, an organophosphate pesticide, on a marine, benthic copepod population. The static-renewal experiment was initiated with 4 treatments including control, 13 replicates per treatment with one female (bearing first clutch of eggs) per replicate. No males were added because one fertilization is sufficient for several clutches. Once weekly, all replicate chamber contents (10-ml culture tubes with 1.5 ml of sediment and 5 ml of seawater) were sieved and enumerated to determine survival and fecundity. Surviving adult females were placed back into chambers with newly spiked sediments. This process was repeated for 7 weeks until all initial females were dead or reproduction had ceased for at least two weeks. Survival and fecundity data were then used to determine population dynamic parameters such as r (intrinsic rate of natural increase) for each treatment. Results revealed a chronic toxicity response with significant population effects (p<0.05) in all pesticide treatments versus the control; concentrations that represent 7-32% of the 96-hr LC50. The control treatment had an r value 26-52% higher than the pesticide treatments. This translated into a control population rate increase of up to twice that of pesticide treatments. In addition, significant reductions in weekly and total fecundity were found in all chlorpyrifos treatments. Based on these results, usage of population parameters with benthic copepods allows for an integrative measurement of population effects from chronic exposure to sediment-associated contaminants.

Raschke, A.M. and Burger, A.E.C. (1997), Risk assessment as a management tool used to assess the effect of pesticide use in an irrigation system, situated in a semi-desert region. *Archives of Environmental Contamination and Toxicology*, **32** (1), 42-49.

Full Text: [A\Arc Env Con Tox32, 42.pdf](A/Arc%20Env%20Con%20Tox32,%2042.pdf)

Abstract: A preliminary study undertaken by the CSIR in July 1993 on the health effects of aerial crop spraying of pesticides in the Vaalharts irrigation area in South Africa indicated that potential health risks could exist for the inhabitants of this area. An extensive scientific health risk assessment and epidemiological study to determine the actual health risks, is very expensive and requires medical and financial justification. The aim of this study was to develop a theoretical health risk model, which could be used as a predictive tool to determine as accurately as possible from the data available if a complete scientific health risk assessment study is justified. The actual amounts of pesticides sold in the Vaalharts area by two major pesticide manufacturers were used to perform a theoretical health risk assessment. The risks were assessed by making use of RISK\*ASSISTANT, a computer modeling system and chemical database. The United States Environmental Protection Agency’s (EPA) health risk model was applied to the data to identify the hazards, assess the exposures and dose response, and characterize the risks. Three exposure scenarios, namely, the ingestion of food and water and the inhalation of air were evaluated. The method used to calculate the risks varied according to the type of health hazard and the results were characterized accordingly. The acute health effects due to exposure to pesticides are well known and the risks are easy to determine. However, the risks associated with chronic health hazards were more difficult to calculate. For this reason a ranking model was developed which made use ofa point scoring system. This model highlights those pesticides which have the greatest possibility of causing chronic health effects. From the results it can be concluded that very large amounts of pesticides are used in the Vaalharts area and that the community might be at risk to chronic health effects. Although the theoretical health risk assessment model was successfully used in this study, its effectiveness as a predictive tool still has to be proven by a complete scientific study.

Mutwakil, M.H.A.Z., Reader, J.P., Holdich, D.M., Smithurst, P.R., Candido, E.P.M., Jones, D., Stringham, E.G. and Depomerai, D.I. (1997), Use of stress-inducible transgenic nematodes as biomarkers of heavy metal pollution in water samples from an English river system. *Archives of Environmental Contamination and Toxicology*, **32** (2), 146-153.

Full Text: [A\Arc Env Con Tox32, 146.pdf](A/Arc%20Env%20Con%20Tox32,%20146.pdf)

Abstract: Transgenic strains of the nematode Caenorhabditis elegans, which carry stress-inducible lacZ reporter genes, are measurably stressed by exposure to heavy metals in aqueous solution. This stress response can be quantified, using enzymatic assays for the reporter gene-product (*Escherichia* coil beta-galactosidase), or estimated approximately by in situ staining for beta-galactosidase in exposed worms. Stress responses to heavy metals have been demonstrated both in laboratory tests using Cd2+ or Hg2+ and also in water samples taken from a metal-polluted river system in southwest England. The River Carnon flows through an area with an ancient mining history, principally for Sn, but also for Cu and other metals; As, Cd, Al, Mn and Zn, as well as large amounts of Fe, are all present in these ore bodies. Four sites in the Carnon river basin were compared with respect to their macroinvertebrate diversity, physical and chemical characteristics (including the concentrations of As, Cd, Al, Cu, Mn, Zn and Fe). Transgenic worms were exposed to water samples from these four sites and also to a 0.33% (v/v) dilution of metal-laden minewater from the principal local mine (Wheal Jane). Transgene expression was induced in all five cases, though markedly less so for the least polluted of the sites (which also supported a richer macroinvertebrate fauna). Two different transgenic strains were tested in this study; strain PC72 (using a homologous hsp16 promoter) is slightly more sensitive to most metal-containing water samples than strain CB4027 (using a heterologous Drosophila hsp70 promoter). Both transgenic strains and two different assay methods gave essentially similar results. These findings demonstrate that transgenic nematodes could provide a rapid and simple assessment of aquatic pollution, in that the transgene response is inducible by mixtures of dissolved metals at concentrations actually encountered in metal-polluted watercourses.

Han, B.C., Jeng, W.L., Jeng, M.S., Kao, L.T., Meng, P.J. and Huang, Y.L. (1997), Rock-shells (*Thais clavigera*) as an indicator of As, Cu, and Zn contamination on the Putai Coast of the black-foot disease area in Taiwan. *Archives of Environmental Contamination and Toxicology*, **32** (4), 456-461.

Full Text: [A\Arc Env Con Tox32, 456.pdf](A/Arc%20Env%20Con%20Tox32,%20456.pdf)

Abstract: This study presents the distribution of arsenic (As), copper (Cu), and zinc (Zn) in various seafoods-oysters (Crassostrea gigas), false fusus (Hemifuscus tuba), venus clams (Cyclina sineasis), green mussels (Perna viridis), blood clams (Arca granosa), flounders (Psettodes erumei), and rock-shells (Thais clavigera) collected from the Putai coast of the black-foot disease (BFD) area in Taiwan. Special attention is paid to evaluate the relationships among As, Cu, and Zn and effect of body size on metal concentration in Thais clavigera. Maximum Zn and Cu geometric mean (GM) concentrations (GM = 615 and 376 microg/g, dry wt, respectively) are found in oysters (Crassostrea gigas), and the values are much higher than those of the other organisms by about 1.7-208 and 1.8-375 times, respectively. Similarly, Thais clavigera has a high capacity for accumulating Cu and Zn collected from the same location. One interesting point is that relatively high As concentrations (GM = 65.7 microg/g, dry wt) in Thais clavigera are found as compared with those in other organisms (range from GM = 2.37 to 40.2 microg/g, dry wt). The As concentrations are significantly higher in Thais clavigera (1.62-27.7 times) than those in other organisms (p < 0.05), except for the false fusus (Hamifuscus tuba). A linear regression analysis shows a significant increase in Zn concentration with increasing Cu concentration in Thais clavigera. On the other hand, the As concentration is correlated with Cu and Zn concentrations (r = 0.77 and 0.77, respectively; p < 0.05) in Thais clavigera. Double logarithmic plots of metal content and concentration against dry-body weight and shell length show linear relationships. The result indicates that large individuals have higher contents of Cu, Zn and As, and have slopes of 1.58, 1.38, and 1.34, respectively. In addition, metal concentrations against shell length for all animal sizes also indicate that Cu, Zn and As have slopes of 1.92, 1.18, and 1.11, respectively. In conclusion, Thais clavigera has a high capactiy for accumulating As, Cu, and Zn and is a potential bioindicator for monitoring As, Cu and Zn.

Tchounwou, P.B., Lantum, D.M., Monkiedje, A., Takougang, I. and Barbazan, Ph. (1997), The urgent need for environmental sanitation and a safe drinking water supply in Mbandjock, Cameroon. *Archives of Environmental Contamination and Toxicology*, **33** (1), 17-22.

Full Text: [A\Arc Env Con Tox33, 17.pdf](A/Arc%20Env%20Con%20Tox33,%2017.pdf)

Abstract: Studies were conducted to assess the physical, chemical, and bacteriological qualities of drinking water in Mbandjock, Cameroon. Study results indicated that the vast majority of drinking water sources possessed acceptable physical and chemical qualities, according to the World Health Organization standards. However, microbiological analyses revealed that only the waters treated by the Cameroon National Water Company (SNEC) and the Sugar Processing Company (SOSUCAM) were acceptable for human consumption. All spring and well waters presented evidences of fecal contamination from human and/or animal origin. Water from these sources should, therefore, be treated before use for drinking. Since the majority of the population gets its water from wells and springs, there is an urgent need to develop a health education program, within the framework of primary health care, with respect to environmental sanitation and safe drinking water supply in this community.

Schuhmacher, M., Xifró, A., Llobet, J.M., de Kok, H.A.M. and Domingo, J.L. (1997), PCDD/Fs in soil samples collected in the vicinity of a municipal solid waste incinerator: Human health risks. *Archives of Environmental Contamination and Toxicology*, **33** (3), 239-246.

Yang, C.Y., Chiu, H.F., Chiu, J.F., Cheng, M.F. and Kao, W.Y. (1997), Gastric cancer mortality and drinking water qualities in Taiwan. *Archives of Environmental Contamination and Toxicology*, **33** (3), 336-340.

Full Text: [A\Arc Env Con Tox33, 336.pdf](A/Arc%20Env%20Con%20Tox33,%20336.pdf)

Abstract: The possible association between the risk of gastric cancer and nitrate and hardness in drinking water from municipal supplies was investigated in a matched case-control study in Taiwan. Data on gastric cancer deaths among eligible residents in Taiwan from 1987 through 1991 (6,766 cases) were obtained from the Bureau of Vital Statistics of the Taiwan Provincial Department of Health. Controls were deaths from other causes (6,766 controls) and were matched individually to the cases by sex, year of birth, and year of death. Data on nitrate-nitrogen (NO3-N) and hardness levels in drinking water throughout Taiwan were collected from the Taiwan Water Supply Corporation (TWSC). The municipality of residence for cases and controls was assumed to be the source of the subject’s nitrate and hardness exposure via drinking water. There was no difference in gastric cancer rates between the groups with different levels of nitrate. The odds ratios (95% confidence interval) for death from gastric cancer was 0.95 (0.87-1.03) for the group with water nitrate levels between 0.23 and 0.44 mg/L, and 1.02 (0.93-1.11) for the group with nitrate levels greater than 0.45 mg/L. However, the results show a significant negative relationship between drinking water hardness and gastric cancer mortality. Odds ratios were 1.16 (1.07-1.26) and 1.65 (1.52-1.79), respectively, for exposure to moderately hard water and soft water compared with the use of hard water. This is an important finding for the Taiwan water industry and human health risk.

Keywords: Stomach-Cancer, Esophageal Cancer, High-Risk, Nitrate, China, Epidemiology, Migration, Nitrite, Model, Diet

Kannan, K., Smith Jr., R.G., Lee, R.F., Windom, H.L., Heitmuller, P.T., Macauley, J.M. and Summers, J.K. (1998), Distribution of total mercury and methyl mercury in water, sediment, and fish from south Florida estuaries. *Archives of Environmental Contamination and Toxicology*, **34** (2), 109-118.

Full Text: [A\Arc Env Con Tox34, 109.pdf](A/Arc%20Env%20Con%20Tox34,%20109.pdf)

Abstract: Concentrations of total mercury and methyl mercury were determined in sediment and fish collected from estuarine waters of Florida to understand their distribution and partitioning. Total mercury concentrations in sediments ranged from 1 to 219 ng/g dry wt. Methyl mercury accounted for, on average, 0.77% of total mercury in sediment. Methyl mercury concentrations were not correlated with total mercury or organic carbon content in sediments. The concentrations of total mercury in fish muscle were between 0.03 and 2.22 (mean: 0.31) micrograms/g, wet wt, with methyl mercury contributing 83% of total mercury. Methyl mercury concentrations in fish muscle were directly proportional to total mercury concentrations. The relationship of total and methyl mercury concentrations in fish to those of sediments from corresponding locations was fish-species dependent, in addition to several abiotic factors. Among fish species analyzed, hardhead catfish, gafftopsail catfish, and sand seatrout contained the highest concentrations of mercury. Filtered water samples from canals and creeks that discharge into the Florida Bay showed mercury concentrations of 3-7.4 ng/L, with methyl mercury accounting for < 0.03-52% of the total mercury. Consumption of fish containing 0.31 microgram mercury/g wet wt, the mean concentration found in this study, at rates greater than 70 g/day, was estimated to be hazardous to human health.

Kurttio, P., Komulainen, H., Hakala, E., Kahelin, H. and Pekkanen, J. (1998), Urinary excretion of arsenic species after exposure to arsenic present in drinking water. *Archives of Environmental Contamination and Toxicology*, **34** (3), 297-305.

Full Text: [A\Arc Env Con Tox34, 297.pdf](A/Arc%20Env%20Con%20Tox34,%20297.pdf)

Abstract: The water from some drilled wells in southwest Finland contains high arsenic concentrations (min-max: 17-980 microg/L). We analyzed inorganic arsenic (As-i) and organic arsenic (monomethylarsonate [MMA] and dimethylarsinate [DMA]) species in urine and conducted a clinical examination of current users (n = 35) and ex-users (n = 12) of such wells. Ex-users had ceased to use the water from the wells 2-4 months previously. Urinary arsenic species were also analyzed from persons whose drinking water contained less than 1 &mgr; g/L of arsenic (controls, n = 9). The geometric means of the concentrations of total arsenic in urine were 58 microg/L for current users, 17 microg/L for ex-users, and 5 microg/L for controls. The excreted arsenic was associated with the calculated arsenic doses, and on average 63% of the ingested arsenic dose was excreted in urine. The ratios of MMA/DMA and As-i/As-tot (As-tot = As-i + MMA + DMA) in urine tended to be lower among the current users and in the higher exposure levels than in controls, suggesting that As-i was better methylated in current users. However, the differences were mainly explained by age; older persons were better methylators of inorganic arsenic than younger individuals. The arsenic content of hair correlated well with the past and chronic arsenic exposure; an increase of 10 microg/L in the arsenic concentration of the drinking water or an increase of 10-20 microg/day of the arsenic exposure corresponded to a 0.1 mg/kg increase in hair arsenic. The individuals were interviewed and complained of muscle cramps, mainly in the legs, and this was associated with elvated arsenic exposure. The present study demonstrates that arsenic methylation has no threshold at these exposure levels.

Yang, C.Y. and Hung, C.F. (1998), Colon cancer mortality and total hardness levels in Taiwan’s drinking water. *Archives of Environmental Contamination and Toxicology*, **35** (1), 148-151.

Full Text: [A\Arc Env Con Tox35, 148.pdf](A/Arc%20Env%20Con%20Tox35,%20148.pdf)

Abstract: The possible association between the risk of colon cancer and hardness levels in drinking water from municipal supplies was investigated in a matched case-control study in Taiwan. All eligible colon cancer deaths (1, 714 cases) of Taiwan residents from 1989 through 1993 were compared with deaths from other causes (1, 714 controls) and the hardness levels of the drinking water used by these residents were determined. Data on water hardness throughout Taiwan have been collected from Taiwan Water Supply Corporation (TWSC). The control group consisted of people who died from other causes and the controls were pair matched to the cases by sex, year of birth, and year of death. The results show a significant negative relationship between drinking water hardness and colon cancer mortality. Odds ratio and 95% confidence intervals were 1.22 (1.04-1.43) and 1.46 (1.22-1.75), respectively, for exposure to moderately hard water and soft water compared with the use of hard water. Trend analyses showed an increasing odds ratio for colon cancer with decreasing levels of hardness in drinking water. This is an important finding for the Taiwan water industry and human health.

Keywords: Epithelial-Cell Proliferation, Colorectal-Cancer, Cardiovascular Mortality, Calcium, Magnesium, Inhibition, Acids

Mariscal, A., Gómez-Aracena, J., Varo, M.C. and Fernández-Crehuet, J. (1998), Interference by carbohydrate substrates, flavonoids, and monosaccharide derivatives on bacterial β-D-glucuronidase assays. *Archives of Environmental Contamination and Toxicology*, **35** (4), 588-593.

Full Text: [A\Arc Env Con Tox35, 588.pdf](A/Arc%20Env%20Con%20Tox35,%20588.pdf)

Abstract: Most commercially available test kits for water and foodstuffs use beta-galactosidase activity for coliforms and beta-glucuronidase activity for *Escherichia coli*. We tested the effects on the beta-glucuronidase activity of E. coli W3110 of substances usually present in foods and several synthetic pharmaceutical compounds. Thirteen substances were tested: three carbohydrates, four flavonoids, five monosaccharide derivatives, and dimethyl sulphoxide. In a minimum medium without any other carbon source, glucose (0.1 mM), quercetin (0.1 mM), silymarin (10 mg/L), D-gluconic acid (0.01 mM), D-gluconic acid lactone (0.01 mM), isopropyl-beta-D-thiogalacto pyranoside (1 mM), p-nitrophenyl beta-D-glucuronide (1 mM), and DMSO (1 M) completely inhibited E. coli glucuronidase activity at the above concentrations. However, the following compounds stimulated E. coli glucuronidase activity within the ranges of concentrations shown: glucose (0.0001-0.01 mM), lactose and sucrose (>0.1 mM), D-saccharic acid 1, 4 lactone (0.0001-0.1 mM), p-nitrophenyl beta-D-glucuronide (0.001-0.01 mM) and DMSO (2-500 mM). In a rich culture medium that contained other carbon sources (lauryl tryptose broth) E. coli glucuronidase activity in the presence of the extra nutrients was unaffected by the test substances and therefore, under normal conditions in water or foods, they should not interfere with E. coli assays based on measurements of beta-glucuronidase activity.

Wong, C.K., Wong, P.P.K. and Chu, L.M. (2001), Heavy metal concentrations in marine fishes collected from fish culture sites in Hong Kong. *Archives of Environmental Contamination and Toxicology*, **40** (1), 60-69.

Full Text: [A\Arc Env Con Tox40, 60.pdf](A/Arc%20Env%20Con%20Tox40,%2060.pdf)

Abstract: The Levels of Six Heavy Metals (Cd, Cr, Cu, Ni, Pb, and Zn) In Different tissues of three species of cultured marine fishes (Epinephelus areolatus, Lutjanus russelli, and Sparus sarba) collected from three fish culture sites in Hong Kong were evaluated. Metal pollution problems in the fish culture sites were serious, as reflected by the high metal concentrations recorded in sea water, sediments, and the biomonitor Perna viridis. In general, tissues of all three species contained high concentrations of Zn and Cu, but much lower concentrations of Ni, Pb, Cd, and Cr. Similar pattern of heavy metal concentrations was observed in sea water, sediment, and P. viridis. Metal concentrations in various tissues varied greatly among species and among fish culture sites. Different tissues showed different capacity for accumulating heavy metals. Gonad of all three species contained high concentrations of Zn. On the other hand, liver seemed to be the primary organ for Cu accumulation. Overall, metal concentrations in the tissues of culture marine fishes were much lower than those in P. viridis. Despite high metal levels in sea water and sediments, concentrations of Cd, Cr, and Pb in edible tissues, including muscle and skin, did not exceed permissible levels recommended by the Hong Kong Government for human consumption.

Keywords: Trace-Metals, Coastal Waters, Organochlorines, Sediments, Harbor

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Full Text: [2010\Arc Env Con Tox59, 147.pdf](2010/Arc%20Env%20Con%20Tox59,%20147.pdf)

Abstract: This study investigated the sorption capacity of estrogenic compounds-such as estrone (E1), 17 beta-estradiol (E2), and 17 alpha-ethynylestradiol (EE2)-of different sediment particle fractions. Two-sized fractions of sediment were used in the experiments, with a particle size < 1 mu m (mostly from 450 to 800 nm) and > 1 mu m up to 50 mu m. Sorption kinetics were followed using a two-step reaction in which the major amount of chemicals was sorbed rapidly within minutes and then gradually increased until equilibrium was reached after 48 h. The sorption capacity of the fine particle fraction (particle size < 1 mu m) was shown to be significantly higher than that of the large fraction (1 mu m < particle size < 50 mu m). The sorption kinetics and isotherm were adequately predicted by using a pseudo second-order model and the Freundlich equation, respectively. Total organic carbon (TOC) content and surface area of particle fractions were also measured. Although the effects of TOC on the sorption of estrogens could not be verified, a higher surface area of fine particle fractions may significantly increase sorption capacity to target compounds. Sorption of estrogens onto sediment particles could be used to explain the differences of estrogenic activity of E2 spiked into different size fractions of particle suspensions.

Keywords: Bisphenol-A, Capacity, Carbon, Chemicals, Contact Time, Equilibrium, Estrogens, Experiments, Fate, Freundlich, Freundlich Equation, Isotherm, Kinetics, Model, Municipal Sewage, Natural Estrogens, Organic, Organic Carbon, Oryzias-Latipes, Particle Size, Particles, Pseudo Second Order, Pseudo Second-Order, Pseudo-Second-Order, Second Order, Second-Order, Second-Order Model, Sediment, Sewage-Treatment Plant, Size, Soils, Sorption, Sorption Capacity, Sorption Kinetics, Steroid Estrogens, Surface, Surface Area, Toc, Water

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Abstract: Point source outbreaks of viral hepatitis have been associated with the consumption of contaminated food and water, yet epidemiologic analysis of the disease in the general population usually provides strong correlations with sub-standard socioeconomic conditions. However, statistical analysis of municipal public health records in Worcester, Massachusetts showed that significant correlations existed between the incidence of viral hepatitis and certain water and sewer parameters. A 5-yr period spanning the epidemic outbreak of 1969 to 1970 was analyzed. Significantly higher incidences of the disease occurred in those areas of the city served by old water and sewer pipes, combined sewers and the low pressure water distribution system. Based on this epidemiologic evidence, the authors propose that an alternate hypothesis, based on hydraulic arguments, can be made which will explain the observations. Although neither hypothesis, socioeconomic or hydraulic, can be excluded solely on the basis of epidemiologic results, this new hypothesis may prove useful in the design of methods for environmental control of viral hepatitis.

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Abstract: The electrophysiological measurement of the blink reflex (BR) can quantify the conduction latency in the reflex arc involving the Vth (trigeminal) and VIIth (facial) cranial nerves. We measured the electrophysiological BR in a population (N = 21), which had alleged chronic exposure to trichloroethylene (TCE) through the public drinking water at levels 30-80 times higher than the Environmental Protection Agency (EPA) Maximum Contamination Level (MCL). A highly significant difference was observed in the conduction latency means of the BR components (p less than .0001), when the study population was compared with laboratory controls (N = 27). This difference suggests a subclinical alteration of the Vth cranial nerve function due to chronic, environmental exposure to TCE.

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Abstract: Three areas in the same region of northwest Peloponnesos, Greece, that had varying concentrations of manganese (Mn) in drinking water were selected for study. The Mn concentrations in areas A, B, and C were 3.6-14.6 micrograms/l, 81.6-252.6 micrograms/l, and 1 800-2 300 micrograms/l, respectively. A random sample (62 in area A, 49 in area B, and 77 in area C) of males and females who were at least 50 y of age were submitted to a thorough neurological examination and their whole-blood Mn and hair Mn concentrations were determined. Although all areas were similar with respect to social and dietary characteristics, significant differences were observed for prevalence of chronic manganese poisoning (CMnP) symptoms and hair Mn concentration. The means (both sexes) of neurological scores were 2.7, 3.9, and 5.2, respectively, for areas A, B, and C (Kruskal-Wallis, chi 2 = 6.44, 2 df, p less than .05 for males; chi 2 = 7.8, 2 df, p less than .05 for females). Hair Mn concentrations were also significantly different, the means for which were 3.51, 4.49, and 10.99 micrograms/g dry weight, respectively (both sexes [p less than .001 for each sex separately]). These results indicate that progressive increases of Mn concentration in drinking water are associated with progressively higher prevalences of neurological signs of CMnP and Mn concentration in hair of older persons.

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Abstract: A follow-up study was conducted from 1967 to 1987 for patients diagnosed as having itai-itai disease, subjects who were suspected of having the disease, and controls. Ninety-five subjects per category were selected after matching for age, sex, and residential area. The cumulative survival rate of the patients who had a definite diagnosis of itai-itai disease was significantly lower than that of the control group in every period after the first 3 y. The cumulative survival rate of the subjects who were suspected of having itai-itai disease and who had severe renal dysfunction due to cadmium pollution was significantly lower than that of the control group. These results demonstrate (1) the enduring negative influence of itai-itai disease on prognosis and (2) that the cadmium pollution-induced renal disorder adversely affects the health of the inhabitants of a cadmium-polluted area.

Lampi, P., Hakulinen, T., Luostarinen, T., Pukkala, E. and Teppo, L. (1992), Cancer incidence following chlorophenol exposure in a community in southern Finland. *Archives of Environmental Health*, **47** (3), 167-175.

Abstract: Chlorophenols have contaminated the drinking water system and the local lake in the village of Järvelä in southern Finland. Local geology, ground water streams, and chemical analyses incriminated a local sawmill as the only plausible source of exposure. Cancer incidence in the municipality of Kärkölä (half of the population lives in Järvelä), compared with the rest of the local health-care district and with the greater cancer control region, indicated an excess of soft-tissue sarcomas and non-Hodgkin’s lymphomas. A case-control study, which focused on cancers of the colon, bladder and soft tissues, lymphomas, and leukemia, demonstrated a significantly elevated risk ratio for non-Hodgkin’s lymphomas among persons who consumed fish from the local lake, which was contaminated with chlorophenols. Probable exposure to chlorophenol-contaminated drinking water played a role in the increased incidence of non-Hodgkin’s lymphomas and possibly was a factor in the development of soft-tissue sarcoma.

Hovinga, M.E., Sowers, M. and Humphrey, H.E. (1993), Environmental exposure and lifestyle predictors of lead, cadmium, PCB, and DDT levels in Great Lakes fish eaters. *Archives of Environmental Health*, **48** (2), 98-104.

Abstract: A previously characterized cohort of 115 Great Lakes fish eaters and 95 non-fish-eating regional controls was reexamined in 1989. Levels of blood lead and cadmium and serum PCB and DDT were measured. Lifestyle characteristics, including recent and historic fish consumption, were evaluated as predictors of contaminant levels using multivariate regression analysis. Significantly elevated serum PCB and DDT levels were observed in fish eaters, compared with controls. Historic fish consumption, rather than recent consumption, was identified as the primary predictor of current serum levels. Mean blood lead and cadmium were also significantly higher in fish eaters than in controls. However, the primary predictors of lead and cadmium were behavioral exposures-specifically smoking and self-reported occupational and recreational exposure-rather than fish consumption. These findings illustrate the importance of evaluating a variety of possible sources when investigating human exposure to environmental contaminants.

Aschengrau, A., Zierler, S. and Cohen, A. (1993), Quality of community drinking water and the occurrence of late adverse pregnancy outcomes. *Archives of Environmental Health*, **48** (2), 105-113.

Abstract: The relationship between community drinking water quality and the occurrence of late adverse pregnancy outcomes was investigated by conducting a case-control study among women who delivered infants during August 1977 through March 1980 at Brigham and Women’s Hospital in Massachusetts. The water quality indices were compared among 1, 039 congenital anomaly cases, 77 stillbirth cases, 55 neonatal death cases, and 1, 177 controls. Trace element levels were gathered from routine analyses of public water supplies from the communities in which the women resided during pregnancy. It was observed that, after adjustment for confounding, the frequency of stillbirths was increased for women exposed to chlorinated surface water (OR 2.6 95% CI 0.9-7.5) and for women exposed to detectable lead levels (OR 2.1; 95% CI 0.6-7.2); the frequency of cardiovascular defects was increased relative to detectable lead levels (OR 2.2, 95% CI 0.9-5.7); and the frequency of central nervous system defects was increased relative to the highest tertile of potassium (OR 6.3, 95% CI 1.1-37.3). The frequency of ear, face, and neck anomalies was increased in relation to detectable silver levels (OR 3.3, 95% CI 0.9-12.2), but the frequency decreased relative to high potassium levels (OR 0.2, 95% CI 0.1-0.7). The frequency of neonatal deaths was decreased relative to detectable fluoride levels (OR 0.4, 95% CI 0.2-1.0), and the frequency of musculoskeletal defects was decreased relative to detectable chromium levels (OR 0.4, 95% CI 0.2-1.0). The majority of these associations were not stable statistically. Further research is needed to corroborate these findings.

Vena, J.E., Graham, S., Freudenheim, J., Marshall, J., Zielezny, M., Swanson, M. and Sufrin, G. (1993), Drinking water, fluid intake, and bladder cancer in western New York. *Archives of Environmental Health*, **48** (3), 191-198.

Abstract: Fluid intake and consumption of specific beverages were investigated in a study of 351 white male cases for whom transitional cell carcinoma of the bladder had been confirmed histologically during the time period from 1979 to 1985. A total of 855 white male controls was selected from Erie, Niagara, and Monroe counties of western New York state. Total fluid consumption was composed of alcoholic beverages, bottled beverages, soda, milk, coffee, tea, all juices, and glasses of tap water. Tap water included coffee, tea, juices, and glasses of water taken directly from the tap. Total fluid consumption was found to be a strong risk factor for bladder cancer when a number of potential confounding risk factors were controlled for. Risks were higher among those who were less than 65 y of age (odds ratio [OR] = 6.3, 95% C.I. = 2.8-14.0). The OR was 3.4 (95% C.I. = 1.8-6.2) for the highest quartile of fluid consumption among those 65 y of age and older. The tap water component was associated with increased risk in both age categories, and there was a clear dose-response relationship. Risks associated with tap water consumption were higher among those who never smoked cigarettes. Both biological and nonbiological explanations for these results are evaluated. The findings suggest implications for public health, but the limitations of the present investigation preclude definitive conclusions and stress the urgency for replication.

Aschengrau, A., Ozonoff, D., Paulu, C., Coogan, P., Vezina, R., Heeren, T. and Zhang, Y. (1993), Cancer risk and tetrachloroethylene-contaminated drinking water in Massachusetts [see comments]. *Archives of Environmental Health*, **48** (5), 284-292.

Abstract: A population-based case-control study was used to evaluate the relationship between cases of bladder cancer (n = 61), kidney cancer (n = 35), and leukemia (n = 34) and exposure to tetrachloroethylene from public drinking water. Subjects were exposed to tetrachloroethylene when it leached from the plastic lining of drinking water distribution pipes. Relative delivered dose of tetrachloroethylene was estimated, using an algorithm that accounted for (1) residential history and duration, (2) whether lined pipe served the neighborhood, (3) distribution system flow characteristics, and (4) pipe age and dimensions. Whether or not latency was considered, an elevated relative risk of leukemia was observed among ever exposed subjects (adjusted OR = 1.96, 95% CI = 0.71-5.37, with latency; adjusted OR = 2.13, 95% CI = 0.88-5.19, without latency) that increased further among subjects whose exposure level was over the 90th percentile (adjusted OR = 5.84, 95% CI = 1.37-24.91, with latency; adjusted OR = 8.33, 95% CI = 1.53-45.29, without latency). When latency was ignored, there was also an increased relative risk of bladder cancer among subjects whose exposure level was over the 90th percentile (adjusted OR = 4.03, 95% CI = 0.65-25.10). Given that tetrachloroethylene is a common environmental and workplace contaminant in the United States, its carcinogenic potential is a matter of public health concern.

? Alexander, L.M., Heaven, A., Delves, H.T., Moreton, J. and Trenouth, M.J. (1993), Relative exposure of children to lead from dust and drinking-water. *Archives of Environmental Health*, **48** (6), 392-400.

Full Text: Arc Env Hea48, 392.pdf

Abstract: The Blackpool, Wyre and Fylde Health Authority, in the North West of England, could be described as a “low-level lead exposure area.” Primary sources of lead exposure are atmospheric fallout (both indoors and outdoors) and potable water consumption. Deciduous teeth were collected from children living in this area as were water samples and outdoor dust samples. Both total lead concentrations and Pb-206:Pb-207 ratios were determined for a defined subset of teeth. Significant differences in the total lead concentrations were found for teeth collected from children resident in different targeted areas (i.e., Blackpool, fleetwood, and Garstang). No significant differences were found between the total lead concentrations or the Pb-206:Pb-207 ratios from dust and water samples in these areas. Examination of the Pb-206:Pb-207 ratios for dust, water, and teeth obtained from each area separately revealed differing patterns of exposure to lead. Determination of Pb-206:Pb-207 ratios, in addition to total lead concentrations, enabled the differences in sources of exposure to be identified in these communities. The authors conclude that isotopic analyses are an important aspect of community survey work, and these analyses can be helpful in accurately targeting intervention strategies aimed at reducing exposure to lead.

Keywords: Dentin Lead, School Performance, Deciduous Teeth, Tooth Type, Follow-up, Intelligence, Childhood, Behavior, Level, IQ

(1994), International workshop: Setting priorities in environmental epidemiology: Report on a World Health Organization meeting. *Archives of Environmental Health*, **49** (4), 239-245.

Abstract: Environmental epidemiology is a rapidly growing field. If the best use of resources is to be made, researchers should concentrate on issues identified as relevant to public health. The Rome Division of the WHO European Centre for Environment and Health organized a workshop to set priorities for research in this area. The meeting was attended by leading experts in the field. Each participant submitted a paper that addressed suggested priorities for research in his or her field of expertise. Using the working papers as a basis of discussion, working groups were formed to clarify priorities in air contamination, water contamination, and radiation and disasters. The participants agreed on the issues that require more research in the hope of avoiding the duplication of efforts and replications of studies on topics on which the evidence was judged sufficient to draw conclusions and to promote public health action. Research groups and funding agencies should use the priorities identified to focus their activities on public health issues and to use funds cost effectively.

Engel, R.R. and Smith, A.H. (1994), Arsenic in drinking water and mortality from vascular disease: An ecologic analysis in 30 counties in the United States. *Archives of Environmental Health*, **49** (5), 418-427.

Abstract: Chronic arsenic consumption can cause vascular diseases. Adverse vascular effects of arsenic in drinking water in the United States have not been studied. This study investigated the ecological relationship between the population-weighted mean arsenic concentration in public drinking water supplies and mortality from circulatory diseases in 30 U.S. counties from 1968 to 1984. Mean arsenic levels ranged from 5.4 to 91.5 micrograms/l. Standardized mortality ratios (SMRs) for diseases of arteries, arterioles, and capillaries (DAAC) (ICD 8th/9th revision, 440-448) for counties exceeding 20 micrograms/l were 1.9 (90% confidence interval [CI] = 1.7-2.1) for females and 1.6 (90% CI = 1.5-1.8) for males. The SMRs for the three subgroups of DAAC-arteriosclerosis, aortic aneurysm, and all other DAAC-tended to be elevated. With respect to the same arsenic group, the SMRs for congenital anomalies of the heart (ICD-8/9, 746/745-746) and circulatory system (ICD-8/9, 747) also tended to be elevated. Two competing interpretations emerge as possibilities: either there are spurious associations resulting from invalid outcome data or causal associations.

Cambra, K. and Alonso, E. (1995), Blood lead levels in 2-year-old to 3-year-old children in the greater-Bilbao-area (Basque country, Spain): Relation to dust and water lead levels. *Archives of Environmental Health*, **50** (5), 362-366.

Full Text: Arc Env Hea50, 362.pdf

Abstract: The objectives of this study were to determine blood lead levels in 2-y-old children in the Greater Bilbao Area (Basque Country, Spain) and to compare those levels with the lead content of different media (i.e., house dust, park dust and soil, and water) in the child’s environment. Between May and September of 1992, 138 children, aged 2 to 3 y, were studied. All children were attended by pediatricians within the public health-care network, and their parents volunteered for the study. A venous blood sample was drawn from each child and was analyzed for lead level, and the parents answered a questionnaire that addressed the socioeconomic background and habits of the children. The environment was investigated in 42 cases. Blood lead levels exceeded 15 µg/dl in 2% of the children, and 14% of the children had levels that exceeded 10 µg/dl (geometric mean = 5.7 µg/dl [4.7-6.7 µg/dl]). Blood lead levels were higher among (a) children whose mothers worked outside the home, (b) children whose fathers had only a primary-level education, and (c) children who lived in houses constructed prior to 1950. The geometrical averages of lead in house dust, park soil, and park dust were 595, 299, and 136 µg/g, respectively. Statistically significant linear correlation was found between blood lead level and lead content in park dust, a finding that explained a 9% variation in blood lead level; a subgroup of these children was also found to have a strong linear association between blood lead and lead content in house dust.

Li, C.S. and Hsu, L.Y. (1996), Home dampness and childhood respiratory symptoms in a subtropical climate. *Archives of Environmental Health*, **51** (1), 42-46.

Full Text: [A\Arc Env Hea51, 42.pdf](A/Arc%20Env%20Hea51,%2042.pdf)

Abstract: The association between measures of home dampness and symptoms of respiratory illness was evaluated in 1 340 8-to 12-y-old children in the Taipei area. The following were reported to occur in the homes: self-dampness (i.e., home considered damp by residents), 36.8% of the homes; “classified” dampness (i.e., presence of mold, water damage, or flooding), 72.3%; visible mold, 38.3%; stuffy odor, 33.9%; water damage, 47.8%; and flooding, 15.1%. Moreover, the prevalence of all respiratory symptoms was consistently higher in homes for which the occurrence of molds or dampness was reported. The adjusted odds ratios ranged from 1.37 (95% confidence interval: 1.03-1.83) for allergic rhinitis to 5.74 (95% confidence interval: 2.20-14.95) for cough. In addition, the observed high prevalence of home dampness/mold indicated that dampness in the home was very common in the subtropical region studied, and home dampness was a strong predictor of respiratory symptoms.

Langlois, P., Smith, L., Fleming, S., Gould, R., Goel, V. and Gibson, B. (1996), Blood lead levels in Toronto children and abatement of lead-contaminated soil and house dust. *Archives of Environmental Health*, **51** (1), 59-67.

Full Text: [A\Arc Env Hea51, 59.pdf](A/Arc%20Env%20Hea51,%2059.pdf)

Abstract: South Riverdale in Toronto, Canada, underwent a lead-abatement program. In 1988, lead-contaminated soil was replaced at 970 properties, and in 1989, professional housecleaning for lead removal was conducted in 717 households. The effect of “abatement” on blood lead levels in young children was investigated. Data were analyzed from 12 cross-sectional blood-screening surveys that were conducted during an 8-y period in South Riverdale and in two comparison areas. Responses regarding behavioral, household, lifestyle, neighborhood, and environmental factors, all of which were gleaned from associated questionnaires, were also analyzed. Response rates varied between 32% and 75%. During the years between 1984 and 1992, blood lead decreased in all study areas. There appeared td be a minimal blood lead level of 2-3 µg/dl for urban Ontario children who were less than 6 y of age. The significant difference between South Riverdale and the control areas disappeared by 1992. Although abatement activity in South Riverdale was associated with an accelerated decline in blood lead levels, it was difficult to distinguish this from effects of decreased Toronto air lead levels or decreased smelter emissions. Within South Riverdale, abatement appeared to be associated with a slower decline in blood lead levels over time, likely the result of selection bias, soil mixing, or recontamination from the smelter. No difference was observed between the separate effects of housecleaning or soil replacement. The findings could neither strongly support nor refute beneficial effects of abatement.

Keywords: Exposure, Paint

Goulet, L., Gaudreau, J. and Messier, A. (1996), Results of a lead decontamination program. *Archives of Environmental Health*, **51** (1), 68-72.

Full Text: [A\Arc Env Hea51, 68.pdf](A/Arc%20Env%20Hea51,%2068.pdf)

Abstract: An epidemiological survey was conducted in August 1991 to evaluate the impact of a public health program. The objective of the program was to decrease the level of exposure to lead of children who lived within 200 m of a lead-reclamation plant. In 1989, these children had a geometric mean blood lead level of 9.2 µg/dl (0.44 µmol/l). Children who were 6 mo to 10 y of age (N = 101) participated in the survey. Demographic and behavioral characteristics of the children and their parents were ascertained by interviewers. Blood samples were taken by venipuncture. Geometric mean blood lead levels were calculated by age in 1991 and by residence in 1989. In 1991, the geometric mean blood lead level had decreased to 5.0 µg/dl (0.24 µmol/l) in children. There was no difference in mean blood lead levels with respect to age or residence. From 1989 to 1991, a significant decrease in the proportion of children who engaged in hand-to-mouth activities was also observed. The lead-poisoning prevention program reached its main objective stated above. The success of this program was attributed to the coordinated actions of public agencies at both the provincial and local levels.

Keywords: Blood Lead, Children, Exposure, Level, Stature

Al-Saleh I., Mustafa, A., Dufour, L., Taylor, A. and Hiton, R. (1997), Lead exposure in the city of Arar, Saudi Arabia. *Archives of Environmental Health*, **51** (1), 73-82.

Full Text: [A\Arc Env Hea51, 73.pdf](A/Arc%20Env%20Hea51,%2073.pdf)

Abstract: In follow-up to a case of lead encephalopathy, high prevalences of lead exposure (23%) and iron deficiency (60%) were found in children who lived in Arar, Saudi Arabia. Environmental factors had minor effects on the blood lead concentrations of these children. We concluded that traditional cosmetics and remedies were the major sources of lead exposure in this Arar population.

Keywords: Iron-Deficiency, Children, Diagnosis, Toxicity, Infants, Empacho, Azarcon, Blood, Women

Li, C.S., Hsu, C.W. and Lu, C.H. (1997), Dampness and respiratory symptoms among workers in daycare centers in a subtropical climate. *Archives of Environmental Health*, **52** (1), 68-71.

Full Text: [A\Arc Env Hea52, 68.pdf](A/Arc%20Env%20Hea52,%2068.pdf)

Abstract: We evaluated the association between measures of dampness in daycare centers (N = 56) in the Taipei area and symptoms of respiratory illness in 612 employees. Dampness was found in 75.3% of the centers, visible mold in 25.8%, stuffy odor in 50.0%, water damage in 49.3%, and flooding in 57.2%. Furthermore, prevalence of sick building syndrome symptoms in the daycare workers was statistically significant among those who worked in centers that had mold or dampness. Also, the observed numerous incidences of dampness or mold in centers were very common in this subtropical region, and dampness was a strong predictor of sick building syndrome symptoms.

Hwang, Y.H., Bornschein, R.L., Grote, J., Menrath, W. and Roda, S. (1997), Urinary arsenic excretion as a biomarker of arsenic exposure in children. *Archives of Environmental Health*, **52** (2), 139-147.

Full Text: [A\Arc Env Hea52, 139.pdf](A/Arc%20Env%20Hea52,%20139.pdf)

Abstract: Urinary arsenic concentration has been used generally for the determination of exposure, but much concern has been raised over the most appropriate expression for urinary arsenic levels. In this study, we examined the influence of various adjustments of expressing urinary arsenic data. All children who were less than 72 mo of age and who were potty trained were invited to participate in the present study. Urine, soil, and dust samples Were collected, and arsenic measurements were made. The geometric mean of speciated urinary arsenic among children who provided first-voided urine samples on 2 consecutive mornings was 8.6 µg/l (geometric standard deviation = 1.7, n = 289). Speciated urinary arsenic was related significantly to soil arsenic in bare areas (p <.0005). Use of a single urine sample versus the average of two first-voided urine samples collected on 2 consecutive mornings did not significantly alter the relationship between environmental arsenic and urinary arsenic levels. Furthermore, none of the adjustments to urinary concentration improved the strength of correlation between urinary arsenic and soil arsenic levels. Concentration adjustments may not be necessary for urinary arsenic levels obtained from young children who provide first-void samples in the morning.

Keywords: Copper Smelter, Ingestion, Flow, Metabolites, Mortality, Cancer, Water

Kurttio, P., Pekkanen, J., Alfthan, G., Paunio, M., Jaakkola, J.J.K. and Heinonen, O.P. (1998), Increased mercury exposure in inhabitants living in the vicinity of a hazardous waste incinerator: A 10-year follow-up. *Archives of Environmental Health*, **53** (2), 129-137.

Full Text: [A\Arc Env Hea53, 129.pdf](A/Arc%20Env%20Hea53,%20129.pdf)

Abstract: A hazardous-waste-treatment plant that housed an incinerator began operation in 1984, before which a baseline survey of the surrounding population and environment was conducted; 10 y later, investigators studied the same subjects. Researchers focused on mercury exposure because mercury concentrations were present in the stack emissions, and environmental monitoring revealed mercury concentrations near the plant. In 1984 and 1994 the median hair mercury concentrations were 0.5 mg/kg and 0.8 mg/kg, respectively. During the 10-y period, median hair total mercury concentrations increased by 0.35 mg/kg in workers (n = 11); by 0.16 mg/kg, 0.13 mg/kg, and 0.03 mg/kg in individuals who lived 2 km (n = 45), 2-4 km (n = 38), and 5 km (n = 30) from the plant, respectively; and by 0.02 mg/kg in the reference group (n = 55). In summary, mercury exposure increased as distance from the plant decreased; however, the increase in exposure was minimal and, on the basis of current knowledge, did not pose a health risk.

Fontana, A., Picoco, C., Masala, G., Prastaro, C. and Vineis, P. (1998), Incidence rates of lymphomas and environmental measurements of phenoxy herbicides: Ecological analysis and case-control study. *Archives of Environmental Health*, **53** (6), 384-387.

Full Text: [A\Arc Env Hea53, 384.pdf](A/Arc%20Env%20Hea53,%20384.pdf)

Abstract: The authors conducted an ecological study of the distribution of malignant lymphomas in a rice-growing area in northern Italy. They considered data on concentrations of phenoxy herbicides in soil and water and found the highest incidence of non-Hodgkin’s lymphoma in subjects who lived in an area where 2,4-dichlorophenoxyacetic acid and 2, 4, 5-trichlorophenoxyacetic acid existed in very high concentrations. During 1985-1988, the incidence of non-Hodgkin’s lymphoma in males in the most-polluted municipalities was twice as high as was noted for the remaining less-polluted territories. During 1991-1993, non-Hodgkin’s lymphoma was higher by 60%. The authors also conducted a population-based case-control study. They found an association between employment of women in rice-growing jobs (particularly as rice weeders) and risk of non-Hodgkin’s lymphoma (odds ratio = 1.9; 95% confidence interval = 0.6, 6.0). Work in rice fields was correlated strongly with residence in polluted areas. The authors did not detect an association between area of residence or occupation and incidence of Hodgkin’s disease.

Wan, G.H. and Li, C.S. (1999), Dampness and airway inflammation and systemic symptoms in office building workers. *Archives of Environmental Health*, **54** (1), 58-63.

Full Text: [A\Arc Env Hea54, 58.pdf](A/Arc%20Env%20Hea54,%2058.pdf)

Abstract: To evaluate dose-response relationships between airway inflammation/systemic symptoms and dampness exposure, we conducted a self-reported questionnaire study on risk factors among 1237 employees in 19 air-conditioned office buildings in the Taipei area. The odds ratio for eye irritation was 1.34 when either stuffy odor or mold was present in the buildings. The odds ratio increased to 1.72 when both stuffy odor and mold were present, to 3.14 when water damage was also present, and to 5.03 when four dampness exposure factors were present. Dampness in the building had a dose-response effect on eye irritation, cough, and lethargy/fatigue.

Schubert, C., Knobeloch, L., Kanarek, M.S. and Anderson, H.A. (1999), Public response to elevated nitrate in drinking water wells in Wisconsin. *Archives of Environmental Health*, **54** (4), 242-247.

Full Text: [A\Arc Env Hea54, 242.pdf](A/Arc%20Env%20Hea54,%20242.pdf)

Abstract: The authors conducted a survey by mail of Wisconsin families who had their well water tested for nitrate to (a) assess their awareness and compliance with the state’s health advisories for nitrate, (b) evaluate their reaction(s) to their test results, and (c) compare demographic differences between exposure levels. Owners of contaminated wells (i.e., > 12.9 mg/l nitrate-nitrogen) were more likely to have lived on a farm, had Tower annual incomes, and had older and shallower wells than families whose wells were low in nitrate (i.e., < 2.0 mg/l nitrate-nitrogen). Most respondents were aware of the advisories for pregnant women and infants and, in accordance with these advisories, the majority of families with nitrate-contaminated drinking water took no remedial action. Given that many rural families consume nitrate-contaminated water daily, scientists should conduct additional research to determine whether chronic ingestion of nitrate-contaminated water poses a significant health threat to these families.

Tsai, S.M., Wang, T.N. and Ko, Y.C. (1999), Mortality for certain diseases in areas with high levels of arsenic in drinking water. *Archives of Environmental Health*, **54** (3), 186-193.

Full Text: [A\Arc Env Hea54, 186.pdf](A/Arc%20Env%20Hea54,%20186.pdf)

Abstract: Blackfoot disease was prevalent in a limited area on the southwest coast of Taiwan, where artesian well water containing arsenic (median = 0.78 ppm arsenic) had been used for many years. Previous studies of arsenic exposure in the blackfoot disease endemic area have been focused on malignant tumors. We, therefore, conducted this study to analyze mortality of all death causes in blackfoot disease endemic areas and to determine other neglected cancers or noncancer diseases related to artesian well water containing high levels of arsenic. We calculated standardized mortality ratios for cancer and noncancer diseases, by sex, during the period from 1971 to 1994 and compared them to the local reference group (i.e, Chiayi-Tainan County) and the national reference group (i.e., Taiwan population). The results revealed marked standardized mortality ratio differences for the 2 reference groups. Greater mortality was found for males and females with bladder, kidney, skin, lung, nasal-cavity, bone, liver, larynx, colon, and stomach cancers, as well as lymphoma than in the local reference population. With respect to noncancer diseases, we found greater mortality for males and females who had vascular disease, ischemic heart disease, diabetes mellitus, and bronchitis than in the local reference group. Mortalities for other diseases-including rectal cancer, cerebrovascular disease, and other diseases-were higher among cases than the local reference group. Our results indicated that the hazardous effect of arsenic is systemic. Diseases related to arsenic exposure included those reported previously by other investigators, as well as diseases reported in the present study.

Keywords: Dose-Response Relationship, Exfoliated Bladder Cells, Blackfoot-Disease, Well Water, Malignant Neoplasms, Vascular-Disease, Cancer, Individuals, Exposure, Taiwan

# Title: Archives of Environmental & Occupational Health

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? Smith, D.R. (2008), Citation analysis and impact factor trends of 5 core journals in occupational medicine, 1985-2006. *Archives of Environmental & Occupational Health*, **63** (3), 114-122.

Full Text: [2008\Arc Env Occ Hea63, 114.pdf](2008/Arc%20Env%20Occ%20Hea63,%20114.pdf)

Abstract: Longitudinal analysis of citation data provides useful historical information on research and publishing trends in our field. A citation-based analysis was performed on 5 core journals published between 1985 and 2006. Detailed historical information on citation rates, cited half-lives, immediacy indices, and impact-factor scores were extracted from the Thomson Scientific Journal Citation Reports via a custom order, and systematically analyzed. Occupational medicine journals have attracted an increasing number of citations in recent years, with this figure rising from just over 5,000 per year in 1985 to almost 17,000 per year by 2006. Impact factors have also increased between 108% and 186% per journal, with an average rise of approximately 158% during the time period examined. Overall, this study suggests that occupational medicine is now attracting increasing attention in the scientific literature, as evidenced by rising citation counts and impact factors.

Keywords: Analysis, Attention, Bibliometric Analysis, Citation, Citation Analysis, Citation Counts, Citation Trends, Citations, Data, Environmental Medicine, Epidemiology, Factors, Field, Future, Health Journals, Impact, Impact Factor, Impact Factor Scores, Impact Factors, Indices, Information, Journal, Journal Citation Reports, Journals, Literature, Medicine, Occupational, Occupational Health, Occupational Medicine, Ophthalmology, Public-Health, Publishing, Rates, Research, Rise, Science, Scientific Journal, Scientific Journals, Scientific Literature, Time, Trends

? Smith, D.R. (2009), Highly cited articles in environmental and occupational health, 1919-1960. *Archives of Environmental & Occupational Health*, **64** (S1), 32-42.

Full Text: [2009\Arc Env Occ Hea64, 32.pdf](2009/Arc%20Env%20Occ%20Hea64,%2032.pdf)

Abstract: Although numerous lists of “citation classics” have been compiled across a variety of scientific fields, few have included articles from environmental and occupational health (EOH). This investigation sought to identify and analyze the most highly cited articles ever published in the Journal of Industrial Hygiene (1919-1935), the Journal of Industrial Hygiene and Toxicology (1936-1949) the Archives of Industrial Hygiene and Occupational Medicine (1950), the American Medical Association (A.M.A.) Archives of Industrial Hygiene and Occupational Medicine (1950-1954), and the A.M.A. Archives of Industrial Health (1955-1960). Regularly cited topics included metal fume fever and various studies of beryllium, whereas the most highly cited article of all was a 1957 paper describing the control of heat casualties at military training centers. Interestingly, the most highly cited articles were not the oldest, and nor were they written as literature reviews. Overall, this Study suggests that although some citation patterns in EOH reflect those of other disciplines, the trend is not uniform and EOH itself appears to have some distinctive bibliometric characteristics.

Keywords: 100 Citation-Classics, Bibliometric, Citation, Citation Classics, Environmental Health, Fertility-and-Sterility, Finding Toxicity Data, General Medical Journals, Google-Scholar, Highly Cited Articles, Impact Factors, Landmark Articles, Menstrual Disorders, Metal, Occupational Health, Public-Health, Publishing, Training, Web-of-Science

? Smith, D.R. (2009), A 30-year citation analysis of bibliometric trends at the *Archives of Environmental Health*, 1975-2004. *Archives of Environmental & Occupational Health*, **64** (S1), 43-54.

Full Text: [2009\Arc Env Occ Hea64, 43.pdf](2009/Arc%20Env%20Occ%20Hea64,%2043.pdf)

Abstract: This article describes a 30-year citation analysis of the Archives of Environmental Health (AEH), from the earliest available data in 1975, to 2004, when it became the Archives of Environmental & Occupational Health (AEOH). Longitudinal trends were examined regarding the number of items published, the number of citations received, the immediacy index, and the journal’s impact factor. A list of the 5 most highly cited articles was also established, including citation frequency and citation lag times. Overall, this study demonstrates that citation analysis can provide an interesting look at the development of a journal over time. The examination of what articles, themes, and topics were being published, cited, or ignored also offers a unique insight into the direction of not only 1 particular journal, but also the discipline within which it exists.

Keywords: Air-Pollution, Bibliometric, Bibliometrics, Citation, Citation Analysis, Citation Frequency, Citation Trends, Citations, Dose Equivalent Rate, Highly Cited Articles, Human-Fetal Development, Impact, Impact Factor, Journal Impact-Factor, Natural Background-Radiation, Occupational Health, Occupational-Medicine, Past 10 Years, Psychology Journals, Respiratory System Mortality, Scientific Journal, Tropical-Medicine

? Smith, D.R. (2010), Highly cited *Articles in Environmental and Occupational Health*, 1919-1960 (vol 64, pg 32, 2009). *Archives of Environmental & Occupational Health*, **65** (2), 112-115.

Full Text: [2010\Arc Env Occ Hea65, 112.pdf](2010/Arc%20Env%20Occ%20Hea65,%20112.pdf)

Keywords: Citation Analysis, General Medical Journals, Google-Scholar, Historical Development, Impact Factor, Scopus, Trends, Web-of-Science

? Smith, D.R. (2010), Identifying a set of ‘core’ journals in occupational health, Part 2: Lists derived by bibliometric techniques. *Archives of Environmental & Occupational Health*, **65** (3), 173-175.

Full Text: [2010\Arc Env Occ Hea65, 173.pdf](2010/Arc%20Env%20Occ%20Hea65,%20173.pdf)

Keywords: Articles, Citation Analysis, Ergonomics, Google-Scholar, Historical Development, Impact Factor Trends, Medical Journals, Scientific Journals, Scopus, Web-of-Science

# Title: Archives of Environmental Protection

Full Journal Title: Archives of Environmental Protection

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Yuan, B. and Bartkiewicz, B. (2009), The removal of Cr(VI) from the aqueous solution by granular ferric hydroxide (GFH). *Archives of Environmental Protection*, **35** (2), 115-123.

Abstract: In this work, sorption of chromium on granular ferric hydroxide (GFH) has been investigated using batch and column techniques. The adsorption behavior of Cr on GFH, depending oil pH, contact time and sorbent amount were Studied. The equilibrium adsorption capacity of GFH I for Cr was measured and extrapolated using Freundlich isotherms. Metal ions bounded to the GFH could be recovered by alkaline Solution, and the GFH can be recycled. The sorption capacity of GFH I was 25.0 mg/g. The ion exchange of chromium oil GFH follows pseudo-first-order kinetics. The intraparticle diffusion of chromium oil GFH presents the limiting rate. The results indicated practical value of this method for industry and also provide strong evidence to support the proposed thesis about the adsorption mechanism.

Keywords: Adsorption, Adsorption Behavior, Adsorption Capacity, Adsorption Isotherms, Adsorption Mechanism, Batch, Batch Tests, Behavior, Capacity, Chromium, Column, Column Tests, Diffusion, Equilibrium, Evidence, Freundlich, GFH, Granular Ferric Hydroxide, Granular Ferric Hydroxide (GFH), Hydroxide, Intraparticle Diffusion, Ion Exchange, Ion-Exchange, Ions, Isotherms, Kinetics, Mechanism, Metal, Metal Ions, pH, Pseudo First Order, Pseudo-First-Order, Pseudo-First-Order Kinetics, Reduction, Removal, Sorbent, Sorption, Sorption Capacity, Support, Techniques, Value, Water, Work

? Kyziol-Komosinska, J., Rosik-Dulewska, C., Pajak, M. and Jarzyna, M. (2010), Removal of direct dyes from wastewater by sorption onto smectite-clay. *Archives of Environmental Protection*, **36** (3), 3-14.

Full Text: Arc Env Pro36, 3.pdf

Abstract: Dyes and pigments are important organic pollutants of the water environment. Dyes may be removed from wastewater by using one of the most efficient methods for wastewater treatment-adsorption onto porous (natural and waste) minerals or organogenic substances. Feasibility of using smectite-clay, co-occurring in brown coal deposits, for removal of direct dyes was investigated. The Freundlich linear regression model was better in modeling of sorption direct dyes onto smectite-clay; it yielded better fit of the theoretical isotherm to the experimental data. The electrostatic interactions and hydrogen bonds were shown to play the most important role in adsorption of direct dyes onto smectite-clay.

Keywords: Acid, Adsorbents, Adsorption, Aqueous-Solution, Coal, Data, Direct Dyes, Dyes, Environment, Experimental, Freundlich, Fullers Earth, Hydrogen, Isotherm, Kinetics, Linear Regression, Methods, Minerals, Model, Modeling, Natural, Organic, Organic Pollutants, Pollutants, Regression, Regression Model, Removal, Role, Smectite-Clay, Sorption, Sorption Isotherms, Waste, Wastewater, Water, Water Environment

# Title: Archives of Environmental Science

Full Journal Title: Archives of Environmental Science

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Wang, M.H. and Ho, Y.S. (2011), Research articles and publication trends in environmental sciences from 1998 to 2009. *Archives of Environmental Science*, **5**, 1-10.

Full Text: [2011\Arc Eur Sci5, 1.pdf](2011/Arc%20Eur%20Sci5,%201.pdf)

Abstract: This study was designed to evaluate global research and publishing trends in the ISI subject category of “environmental science” from 1998 to 2009. Data were based on the online version of the Science Citation Index Expanded, Web of Science. Articles referring to environmental science were evaluated based on document-type distributions. Distributions of words in article titles, author keywords, and KeyWords Plus at different periods were analysed. The results of the word distributions were analyzed for word cluster to evaluate research trends. The analyses showed that water-related topics received the most attention from researchers. An increasing trend was found in wastewater research after 2004. Overall, model, carbon, and adsorption were the three hot research topics in the environmental science category.

Keywords: Research Trends, Environmental Science, Bibliometric, Word Cluster Analysis

? Zhu, Y.Q., Wang, M.H. and Ho, Y.S. (2011), An analysis of research activity in department of chemical engineering in USA. *Archives of Environmental Science*, **5**, 62-70.

Full Text: [2011\Arc Eur Sci5, 62.pdf](2011/Arc%20Eur%20Sci5,%2062.pdf)

Abstract: A bibliometric analysis was carried out to identify the research activities related to the department of chemical engineering (CE) in the United States of America from 2002 to 2010 and to improve the understanding of research trends in the same period, based on the online version of Science Citation Index Expanded (SCI-EXPANDED), the Thomson Reuters Web of Science. Articles published by CE researchers were evaluated, basing on the distribution of journals and the collaborative relations. Research tendency was investigated by statistically analyzing the distribution of words in article title, author keywords, and KeyWords Plus in different periods and the research behavior of the top institutes were studied according to journals and author keywords. Results showed that research activities in CE have been more involved in interdisciplinary projects. Areas related to nanoscale science, biochem, as well as energy & environmental had an increasing trend during the recent 9 years.

Keywords: Bibliometric, Web of Science, USA, Chemical Engineering, Research Trends

? Ma, H.Y., Ho, Y.S. and Fu, H.Z. (2011), Solid waste related research in Science Citation Index Expanded. *Archives of Environmental Science*, **5**, 89-100.

Full Text: [2011\Arc Eur Sci5, 89.pdf](2011/Arc%20Eur%20Sci5,%2089.pdf)

Abstract: A bibliometric approach was employed to quantitatively assess current research trends on solid waste by analyzing the related publications in the Science Citation Index Expanded (SCI-Expanded) database from 1991 to 2010. The general analyses were processed by characteristics of distribution covering publication outputs, journals, Web of Science categories, countries, and institutes, and research emphases and trends including author keywords, words in title, words in abstract, and KeyWords Plus analysis. Over the last 20 years, annual publication outputs showed a notable growth trend. Waste Management published the most articles, and the solid waste related articles were becoming centered in this journal, especially in 2009 and 2010. The G7 (the USA, Germany, the UK, Japan, France, Canada, and Italy) played active roles in publication, and the USA was the most productive country. Particularly, China experienced the greatest growth rate, and surpassed the USA in annual production in 2008. Furthermore, the searching keyword “solid waste\*” was migrating from the fields of author keywords, title, and abstract to the field of KeyWords Plus. By synthetic analysis of these keywords, it was concluded that landfill, waste-to-energy, composting, and recycling were the common solution methods for solid waste problems, and would continue to be the leading research methods. Heavy metals, anaerobic digestion, sewage sludge, soil, and adsorption were also considered as hot spots. Food waste, another increasing concern, had strong potential in the near future.

Keywords: Solid Waste, Research Trends, Bibliometric, SCI-Expanded

# Title: Archives Europeennes de Sociologie

Full Journal Title: Archives Europeennes de Sociologie

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mirowski, P. (2010), Bibliometrics and the Modern Commercial Regime. *Archives Europeennes de Sociologie*, **51** (2), 243-270.

Full Text: [2010\Arc Eur Soc51, 243.pdf](2010/Arc%20Eur%20Soc51,%20243.pdf)

Abstract: This paper examines the role of bibliometrics in exploring the question of the effect of commercialization upon the health of American science. It approaches the problem through the question: What would constitute relevant evidence documenting decline in the number of scientific articles published by American authors in the last two decades? Because even the data have been privatized recently, it begins by criticizing article counts used in other venues. It concludes by demonstrating that the problem of decline is not merely in relative shares between countries, but also an absolute decline in American-authored articles across the board. We close with some proposed causes of the decline.

Keywords: America, Bibliometric Organizations, Bibliometrics, Output, Press, Privatisation, Science, Science, Trends, USA

# Title: Archives of Family Medicine

Full Journal Title: Archives of Family Medicine

ISO Abbreviated Title: Arch. Fam. Med.

JCR Abbreviated Title: Arch Fam Med

ISSN: 1063-3987

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Medical Assoc

Publisher Address: 515 N State St, Chicago, IL 60610

Subject Categories:

Medicine, General & Internal: Impact Factor

Lalumandier, J.A. and Ayers, L.W. (2000), Fluoride and bacterial content of bottled water vs tap water. *Archives of Family Medicine*, **9** (3), 246-250.

Abstract: Context: Bottled water has become a status symbol and is frequently used in place of tap water. While both waters are considered safe to drink, is either more beneficial in preventing tooth decay and is there a difference in purity?

Objective: To determine the fluoride level and bacterial content of commercially bottled waters municipal tap water and to compare the results.

Design: Comparative study.

Setting: Cleveland, Ohio.

Sample: Fifty-seven samples of 5 categories of bottled waters were purchased from local stores. Samples of tap water were collected in sterile containers from the 4 local water processing plants. Fluoride levels were determined by an ion-selective electrode method. Water was cultured quantitatively and levels of bacteria were calculated as colony-forming units (CFUs) per milliliter.

Main Outcome Measure: Fluoride levels and bacterial counts.

Results: Fluoride levels within the range recommended for drinking water by the Ohio Environmental Protection Agency, Cincinnati, 0.80 to 1.30 mg/L, were found in only 3 samples of bottled water tested. The fluoride levels of tap water samples were within 0.04 mg/L of the optimal fluoride level of 1.00 mg/L. The bacterial counts in the bottled water samples ranged from less than 0.01 CFU/mL to 4900 CFUs/mL, including 6 samples with levels substantially above 1000 CFUs/mL. In contrast, bacterial counts in samples of tap water ranged from 0.2 to 2.7 CFUs/mL.

Conclusions: Five percent of the bottled water purchased in Cleveland fell within the required fluoride range recommended by the state, compared with 100% of the tap water samples, all of which were also within 0.04 mg/L of the optimal fluoride level of 1.00 mg/L. Use of bottled water based on the assumption of purity can be misguided. Recently, the Environmental Protection Agency, Washington, DC, published a final ruling that requires community water systems to regularly report to the public on the quality of local tap water; there are no similar proposals to determine the quality of bottled water through labeling.

Keywords: Root Caries, Fluorosis

# Title: Archives of General Psychiatry

Full Journal Title: Archives of General Psychiatry

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Saha, S., Chant, D. and McGrath, J. (2007), A systematic review of mortality in schizophrenia: Is the differential mortality gap worsening over time? *Archives of General Psychiatry*, **64** (10), 1123-1131.

Abstract: Context: Despite improvements in mental health services in recent decades, it is unclear whether the risk of mortality in schizophrenia has changed over time. Objective: To explore the distribution of standardized mortality ratios ( SMRs) for people with schizophrenia. Data Sources: Broad search terms were used in MEDLINE, PsychINFO, Web of Science, and Google Scholar to identify all studies that investigated mortality in schizophrenia, published between January 1, 1980, and January 31, 2006. References were also identified from review articles, reference lists, and communication with authors. Study Selection: Population- based studies that reported primary data on deaths in people with schizophrenia. Data Extraction: Operationalized criteria were used to extract key study features and mortality data. Data Synthesis: We examined the distribution of SMRs and pooled selected estimates using random- effects meta- analysis. We identified 37 articles drawn from 25 different nations. The median SMR for all persons for all- cause mortality was 2.58 ( 10%- 90% quantile, 1.185.76), with a corresponding random- effects pooled SMR of 2.50 ( 95% confidence interval, 2.18- 2.43). No sex difference was detected. Suicide was associated with the highest SMR ( 12.86); however, most of the major causes- ofdeath categories were found to be elevated in people with schizophrenia. The SMRs for all- cause mortality have increased during recent decades ( P=. 03). Conclusions: With respect to mortality, a substantial gap exists between the health of people with schizophrenia and the general community. This differential mortality gap has worsened in recent decades. In light of the potential for second- generation antipsychotic medications to further adversely influence mortality rates in the decades to come, optimizing the general health of people with schizophrenia warrants urgent attention.

Keywords: Analysis, Attention, Authors, Cardiovascular-Disease, Communication, Excess Mortality, Extraction, Follow-up, Global Burden, Google Scholar, Health Services, Induced Weight-Gain, Medline, Mental Health, Metabolic Syndrome, Mortality, New-Generation Antipsychotics, Primary, Psychiatric Case Register, Quality-of-Life, Record-Linkage, References, Review, Risk, Schizophrenia, Science, Sex Difference, Sources, Systematic, Systematic Review, Web of Science

? Large, M., Sharma, S., Compton, M.T., Slade, T. and Nielssen, O. (2011), Cannabis use and earlier onset of psychosis. *Archives of General Psychiatry*, **68** (6), 555-561.

Abstract: Context: A number of studies have found that the use of cannabis and other psychoactive substances is associated with an earlier onset of psychotic illness. Objective: To establish the extent to which use of cannabis, alcohol, and other psychoactive substances affects the age at onset of psychosis by meta-analysis. Data Sources: Peer-reviewed publications in English reporting age at onset of psychotic illness in substance-using and non-substance-using groups were located using searches of CINAHL, EMBASE, MEDLINE, PsycINFO, and ISI Web of Science. Study Selection: Studies in English comparing the age at onset of psychosis in cohorts of patients who use substances with age at onset of psychosis in non-substance-using patients. The searches yielded 443 articles, from which 83 studies met the inclusion criteria. Data Extraction: Information on study design, study population, and effect size were extracted independently by 2 of us. Data Synthesis: Meta-analysis found that the age at onset of psychosis for cannabis users was 2.70 years younger (standardized mean difference=-0.414) than for nonusers; for those with broadly defined substance use, the age at onset of psychosis was 2.00 years younger (standardized mean difference=-0.315) than for nonusers. Alcohol use was not associated with a significantly earlier age at onset of psychosis. Differences in the proportion of cannabis users in the substance-using group made a significant contribution to the heterogeneity in the effect sizes between studies, confirming an association between cannabis use and earlier mean age at onset of psychotic illness. Conclusions: The results of meta-analysis provide evidence for a relationship between cannabis use and earlier onset of psychotic illness, and they support the hypothesis that cannabis use plays a causal role in the development of psychosis in some patients. The results suggest the need for renewed warnings about the potentially harmful effects of cannabis.

Keywords: 1st-Episode Psychosis, Abuse, Age, Alcohol, Cannabis, Comorbid Substance Use, Contribution, Development, EMBASE, Extraction, ISI, Medline, Mental-Disorders, Meta Analysis, Meta-Analysis, Metaanalysis, Misuse, Psychosis, Publications, Schizophrenia, Science, Sources, Use Disorders, Web of Science

# Title: Archives of Gerontology and Geriatrics

Full Journal Title: Archives of Gerontology and Geriatrics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Teixeira, C.V.L., Gobbi, L.T.B., Corazza, D.I., Stella, F., Costa, J.L.R. and Gobbi, S. (2011), Non-pharmacological interventions on cognitive functions in older people with mild cognitive impairment (MCI). *Archives of Gerontology and Geriatrics*, **54** (1), 175-180.

Full Text: [2011\Arc Ger Ger54, 175.pdf](2011/Arc%20Ger%20Ger54,%20175.pdf)

Abstract: Mild cognitive impairment (MCI) can be a stage of pre-dementia. There is no consensus about pharmacological treatment for this population, so it is important to structure non-pharmacological interventions for increasing their cognitive reserve. We intended to analyze the effects of non-pharmacological interventions in the cognitive functions in older people with MC, in form of a systemic review. Data sources were the Web of Science, Biological Abstracts, Medline, Pub Med, EBSCHost, Scirus and Google Scholar. All studies were longitudinal trials, with MCI sample, aged > 60 years, community-dwelling, and having cognitive functions as dependent variable. Seven studies, from 91 previously selected ones, were identified according to the inclusion criteria. Six studies used cognitive intervention, improving memory and one study used physical activity as intervention, improving executive functions. The results show evidence that physical activity and cognitive exercise may improve memory and executive functions in older people with MCI. But yet, more controlled studies are needed to establish a protocol of recommendations regarding the systemization of exercise, necessary to produce benefits in the cognitive functioning in older people with MCI. (C) 2011 Elsevier Ireland Ltd. All rights reserved.

Keywords: Adults, Aged, Alzheimers-Disease Patients, Cognitive Functions, Cognitive Impairment, Cognitive Intervention, Controlled Studies, Dementia, Elderly Subjects, Exercise, Google Scholar, Health, Improvement, Intervention, Interventions, Medline, Memory, Mild Cognitive Impairment, Non-Pharmacological Interventions, Older People, Physical Activity, Physical-Activity, Protocol, Pub Med, Recommendations, Rehabilitation Program, Review, Science, Systemic Review, Treatment, Web of Science

# Title: Archives of Gynecology and Obstetrics

Full Journal Title: Archives of Gynecology and Obstetrics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kamel, R.M. (2010), The onset of human parturition. *Archives of Gynecology and Obstetrics*, **281** (6), 975-982.

Full Text: [2010\Arc Gyn Obs281, 975.pdf](2010/Arc%20Gyn%20Obs281,%20975.pdf)

Abstract: Despite impressive progress in the science and technology of reproduction, the mechanism by which labour is initiated in humans remains obscure. As the labour in humans is a distinct event differs from what happens in animals, this study aims to gather the current theories that could explain when and why the onset of human parturition occurs. In a comprehensive review study done at the School of Medicine and Dentistry, University of Bristol, United Kingdom, MetaLib, the university web-based electronic library, was cross-searched for the factors behind the onset of labour in humans through different medical databases such as; Allied and Complementary Medicine Database (AMED), BIOSIS Previews on Web of Knowledge, PUBMED, Cochrane Library, Medline and Web of Science, in-addition to the relevant printed medical journals and periodicals. The study revealed that among the potential factors involved in the process of human parturition are the changes in hormonal levels of estrogen and progesterone, increased production of prostaglandins and oxytocin, and the high levels of corticotrophin releasing hormone and cortisol are some among the potential factors involved in the process of human parturition. Inflammatory reactions with the release of cytokines are among the most accepted theories for term and preterm labours. It is most likely that the interaction between all these factors and others, yet to be discovered, play in harmony to initiate the process of labour in women. The result show that birth is a result of complex, partially defined, events that are tightly regulated by a variety of mechanisms and mediators of endocrine, nervous and immune systems. Unfortunately, none of them is completely elucidated.

Keywords: Amniotic-Fluid, Cochrane, Corticotropin-Releasing Hormone, Cortisol, Databases, Estrogen, Factor-Kappa-B, Functional Progesterone Withdrawal, Gestational Tissues, Human, Human Fetal Membranes, Human Labor, Humans, Inositol Phosphoglycan-P, Journals, Knowledge, Labour, Mechanism, Medical, Medical Journals, Necrosis-Factor-Alpha, Onset of Human Birth, Parturition, Periodicals, Preterm Birth, Progesterone, PUBMED, Reproduction, Review, Science, Science And Technology, Theories, United Kingdom, University, Web of Knowledge, Web of Science, Women

? Mylonas, I., Brüning, A., Kainer, F. and Friese, K. (2010), HTLV infection and its implication in gynaecology and obstetrics. *Archives of Gynecology and Obstetrics*, **282** (5), 493-501.

Full Text: [2010\Arc Gyn Obs282, 493.pdf](2010/Arc%20Gyn%20Obs282,%20493.pdf)

Abstract: Worldwide, 20-30 million people are estimated to be infected with HTLV. HTLV-1 is endemic in Western Africa and Southern Japan, whereas HTLV-2 is considered to be spread among native American people. The impact of HTLV in gynaecology and obstetrics is being reviewed. Search strategy and selection criteria for identifying relevant data were peformed by searching Medline, Current Contents, Web of Science, EMBASE and references from relevant articles. English and German gynaecological and infectious diseases textbooks as well as national and international guidelines and recommendations were also reviewed. Transmission may occur by sexual intercourse or cellular blood products. Although materno-fetal transmission is debated, transmission through maternal breast milk has been confirmed. An HTLV-infection can lead to adult T-cell leukaemia (ATL) or cumulative opportunistic and neurological disorders that can occur with varying degrees of severity. Diagnosis can be done by antibody detection via the use of ELISA and western blot analysis as well as PCR diagnosis. Due to inadequate treatment options and the lack of an effective vaccination, prevention is currently only possible by restricting transmission, including the usage of condoms during sexual intercourse or avoiding breastfeeding in HTLV-seropositive mothers. If, due to socio-economic reasons, breastfeeding cannot be avoided, short-term breastfeeding for a maximum of up to 6 months is suggested.

Keywords: Adult, Africa, Analysis, Blood, Breast Feeding, Cell Leukaemia, Lymphoma Virus, Child Transmission, Diagnosis, Female-Sex-Workers, Guidelines, Htlv Infection, I-Associated Myelopathy, Impact, Infection, Infectious Diseases, Japan, Lead, Mothers, Obstetrics, PCR, Prevention, Prevention Strategies, Proviral Load, Real-Time PCR, Science, Search Strategy, Strategy, T-Lymphotropic-Virus, Textbooks, Transmission, Treatment, Tropical Spastic Paraparesis, Type-1 HTLV-1, Vaccination, Vertical Transmission, Web of Science

? Basaran, A., Basaran, M. and Topatan, B. (2011), Chorionic villus sampling and the risk of preeclamspia: A systematic review and meta-analysis. *Archives of Gynecology and Obstetrics*, **283** (6), 1175-1181.

Full Text: [2011\Arc Gyn Obs283, 1175.pdf](2011/Arc%20Gyn%20Obs283,%201175.pdf)

Abstract: To perform systematic review and meta-analysis to evaluate the risk of preeclampsia after chorionic villus sampling (CVS). A systematic search of PUBMED and Web of Science from inception through August 2010, and bibliographies of review articles and eligible studies were performed. Six studies reported the risk of preeclampsia after CVS. All of the identified studies were retrospective and included in analysis. Reporting quality of the identified studies according to quality assessment scale for methodology in retrospective clinical reporting was moderate. Pooling was performed in two strata for control: (1) patients without any invasive prenatal diagnostic procedure served as control group: no significant difference was found in the odds ratio (OR) of preeclampsia (OR 0.79, 95% CI 0.38-1.64), severe preeclampsia (OR 0.49, 95% CI 0.04-5.78), gestational hypertension (OR 0.76, 95% CI 0.46-1.26), all pregnancy-induced hypertensive disorders (OR 0.80, 95% CI 0.46-1.41) between CVS and control groups. (2) Patients with amniocentesis combined with patients without any invasive prenatal diagnostic procedure served as control group: no significant difference was found in the OR of preeclampsia (OR 0.76, 95% CI 0.37-1.53), severe preeclampsia (OR 0.83, 95% CI 0.14-4.85), all pregnancy-induced hypertensive disorders (OR 0.92, 95% CI 0.55-1.53) between CVS and combined control groups. None of the included studies were randomized prospective trials designed to investigate the effect of CVS on preeclampsia. Accordingly, this review is limited by the heterogeneity, small number and retrospective nature of the available studies. CVS does not seem to increase the risk of preeclampsia or other pregnancy-induced hypertensive disorders. However, randomized prospective trials that are designed to investigate the risk of preeclampsia after CVS are needed to make a definite conclusion.

Keywords: Analysis, Assessment, Association, Chorionic Villus Sampling, Control, Control Groups, Gestational Hypertension, Hypertension, Hypertensive Disorders, Meta-Analysis, Methodology, Placental Disruption, Preeclampsia, Pregnancy, Pregnancy, Pregnancy Induced Hypertension, Ratio, Review, Risk, Science, Systematic, Systematic Review, Web of Science

? Yi, Y.X., Zhang, W., Guo, W.R., Zhou, Q. and Su, Y. (2011), Meta-analysis: The comparison of clinical results between vaginal and laparoscopic myomectomy. *Archives of Gynecology and Obstetrics*, **283** (6), 1275-1289.

Full Text: [2011\Arc Gyn Obs283, 1275.pdf](2011/Arc%20Gyn%20Obs283,%201275.pdf)

Abstract: To evaluate the clinical results of vaginal myomectomy and laparoscopic myomectomy (LM). The database of PUBMED, EMBASE, Web of Science, ProQuest, Cochrane library and China Biological Medicine Database (CBM), Chinese National Knowledge Infrastructure (CNKI), Wanfang (Chinese) and VIP (Chinese) were searched using the keywords “laparoscopic”, “laparoscopically”, “vaginal”, “trasvaginal”, “myomectomy”, “randomized”, “randomised” and “randomly” to identify randomized controlled trails which compared vaginal myomectomy and LM. Studies are also searched by hand. No language restrictions were made. Four trials were studied and the analysis was performed using Review Manager Version 5 and R software Version 2.11.1. The results had shown that vaginal myomectomy was associated with less operation time significantly, but reduced blood loss, hospital stay and gas recovery and more minor complications without significant difference. This meta-analysis was not powerful to form an accurate conclusion because of less number, low quality of included studies and no data on major complications and long-term outcomes such as recurrence and pregnancy. Hence, more studies and data should be awaited and involved for further evaluation.

Keywords: Analysis, Blood, China, Clinical Results, Cochrane, EMBASE, Evaluation, Feasibility, Hospital, Knowledge, Laparoscopic Myomectomy, Meta Analysis, Meta-Analysis, Myomas, Outcomes, Posterior Colpotomy, Pregnancy, PUBMED, Recurrence, Review, Safety, Science, Software, Surgery, Vaginal Myomectomy, Web of Science

? Erel, T. and Guralp, O. (2011), Epilepsy and menopause. *Archives of Gynecology and Obstetrics*, **284** (3), 749-755.

Full Text: [2011\Arc Gyn Obs284, 749.pdf](2011/Arc%20Gyn%20Obs284,%20749.pdf)

Abstract: Epilepsy and menopause have complicated interactions. Treatment of epilepsy may cause exacerbation of osteoporosis and alter the effects of hormone replacement therapy (HRT) whereas HRT may influence the frequency of seizures. An extensive search was performed in the Cochrane Central Trials Registry, the Web of Science, and PubMed for publications using the keywords “(epilepsy OR Seizure) AND (menopause OR osteoporosis)”; “Anti-epileptic drugs AND (menopause OR osteoporosis); HRT AND epilepsy” between 1970 and 2010 and English language. All eligible trials were included. The frequency of catamenial type of epileptic seizures may increase during perimenopause due to hyperestrogenism and subside after menopause. Sexual dysfunction can be severe depending upon the effect of lack of estrogen in menopause and epilepsy itself. Osteoporosis and fractures may increase due to hypoestrogenism in menopause and cytochrome P450 inducing anti-epileptic drugs. According to the current data, conjugated equine estrogens plus 2.5 mg of medroxyprogesterone acetate may increase the frequency of epileptic seizures. Women with epilepsy may need to take HRT, at least for symptomatic relief and to allow adequate sleep when “hot flushes” are disruptive. A combination of a single estrogenic compound such as 17-beta-estradiol along with natural progesterone could be considered in these patients.

Keywords: Anti-Epileptic Drugs, Antiepileptic Drugs, Bone-Density, Cochrane, Cytochrome P450, Double-Blind, Drugs, Epilepsy, Estrogen, Estrogens, Ethinyl Estradiol, Exacerbation, Frequency, Healthy Women, Hormone Replacement Therapy, Menopause, Osteoporosis, Ovariectomized Female Rats, P450, Partial Seizures, Patients, Progesterone, Publications, Pubmed, Reproductive Endocrine Disorders, Science, Seizure, Temporal-Lobe Origin, Therapy, Web of Science, Women

? Guralp, O. and Kushner, D.M. (2011), Iatrogenic transtubal spill of endometrial cancer: Risk or myth. *Archives of Gynecology and Obstetrics*, **284** (5), 1209-1221.

Full Text: [2011\Arc Gyn Obs284, 1209.pdf](2011/Arc%20Gyn%20Obs284,%201209.pdf)

Abstract: Introduction Although intrauterine procedures are essential for endometrial evaluation in many cases, the significance of the amount of tumor cell dissemination during these procedures, the viability and invasive potential of the endometrial cancer (EC) cells, and their impact on prognosis remain elusive. Materials and methods An extensive search was performed in the Cochrane Central Trials Registry, the Web of Science, and PubMed for publications about the role of hysteroscopy (H/S), saline infusion sonography (SIS) and laparoscopy (L/S) in dissemination of EC cells and prognostic significance of positive peritoneal washings (PPW), between 1988 and 2010 and English language. All eligible trials were included. Conclusion PPW rates vary between 0-14% after dilatation and curettage (D&C), 0-83% after H/S, 0-10% after L/S and 12-52% after SIS. The majority of the studies about EC cell dissemination during H/S and SIS suggest that they increase the risk of spill. There is not enough evidence to support the association between tumor spill and pressure, type and volume of distension medium, duration of the procedure, stage, grade and interval between H/S or SIS and laparotomy. Investigation into the rate of spill of EC cells during laparoscopic surgery is in the early stages and not yet definitive. There are too few in vivo and in vitro studies to comment definitively on the viability of the disseminated EC cells. The limited data we do have, however, questions the ability of disseminated EC cells to maintain and grow. Most published studies support the idea that prognosis is not affected by PPW in stage I EC. The changes in FIGO 2009 staging of EC appears to have merit when considering the sum of the data. H/S and SIS probably increase the risk of spill, however this increase does not seem effect prognosis. Although peritoneal washings are still expected to be performed, PPW itself does not necessitate additional treatment.

Keywords: Author, Cancer, Carcinoma-Cells, Cell Seeding, Clinical Stage-I, Cochrane, Diagnostic Hysteroscopy, Dissemination, Endometrial Cancer, Endometrial Carcinoma Cell Dissemination, English, Evaluation, Hysteroscopy, Impact, In Vivo, Laparoscopic Surgery, Laparoscopy, Malignant-Cells, Microscopic Extrauterine Spread, Office Hysteroscopy, Positive Peritoneal Cytology, Pressure, Prognosis, Prognostic-Significance, Prospective Trial, Publications, Pubmed, Risk, Saline Infusion Sonography, Saline Infusion Sonohysterography, Science, Sonohysterosalphingography, Surgery, Treatment, Turkey, Viability, Web of Science

# Title: Archives of History of Exact Sciences

Full Journal Title: Archives of History of Exact Sciences

ISO Abbreviated Title:

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Subject Categories:

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? Fisher, C.S. (1966), The death of mathematical theory: A study in the ssociology of knowledge. *Archives of History of Exact Sciences*, **3**, 137-159.

# Title: Archives of Internal Medicine

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Language: English

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Medicine, General & Internal: Impact Factor 6.749 (2002)

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Full Text: -1959\Arc Int Med28, 367.pdf

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Full Text: -1959\Arc Int Med28, 394.pdf

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Full Text: -1959\Arc Int Med28, 421.pdf

Notes: highly cited

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Full Text: 1995\Arc Int Med155, 1933.pdf

Abstract: In a systematic review of the efficacy of interventions intended to help people stop smoking, data have been analyzed from 188 randomized controlled trials. Following personal advice and encouragement to stop smoking given by physicians during a single routine consultation, an estimated 2% (95% confidence limits, 1%, 3%; P<.001) of all smokers stopped smoking and did not relapse up to 1 year as a direct consequence of the advice. The effect is modest but cost-effective: the cost of saving a life is about $1500. Supplementary interventions (follow-up letters or visits, demonstration of spirometry, etc) have an additional effect-variable in extent. Advice and encouragement are particularly effective for smokers at special risk-pregnant women (efficacy, 8%) and patients with ischemic heart disease. Behavior modification techniques (relaxation, rewards and punishment, avoiding “trigger” situations, etc),in group or individual sessions led by a psychologist, have an effect that is statistically significant (P=.05) but no greater than simple advice by a physician (2%); yet, these techniques are several times more expensive. The effect of hypnosis is unproved (no trials have used biochemical markers). Nicotine replacement therapy is effective in an estimated 13% of smokers who seek help in cessation; the effect is greater in those who are nicotine-dependent. Other pharmacological treatments are not of proven efficacy, and acupuncture is ineffective. Sudden cessation or gradual reduction in smoking are similar in their efficacy on average. Physicians should take time to advise all their patients who smoke to quit. Smokers who are intent on stopping should be given additional support and encouraged to use nicotine replacement therapy.

Keywords: Randomized Controlled Trial, Spectrum Behavioral-Approach, General-Practice, Cigarette-Smoking, Cessation Program, Clinical-Trial, Primary Care, Withdrawal Symptoms, Health-Education, Pregnant-Women

? Khan, K.S., Daya, S. and Jadad, A.R. (1996), The importance of quality of primary studies in producing unbiased systematic reviews. *Archives of Internal Medicine*, **156** (6), 661-666.

Full Text: [1996\Arc Int Med156, 661.pdf](1996/Arc%20Int%20Med156,%20661.pdf)

Abstract: Background: Traditional and largely qualitative reviews of evidence are now giving way to much more structured systematic overviews that use a quantitative method to calculate the overall effect of treatment. The latter approach is dependent on the quality of primary studies, which may introduce bias if they are of poor methodologic quality.

Objective: To test the hypothesis that the inclusion of poor-quality trials in meta-analyses would bias the conclusions and produce incorrect estimates of treatment effect.

Methods: An overview of randomized trials of antiestrogen therapy in subfertile men with oligospermia was performed to test the hypothesis. Data sources included online searching of MEDLINE and Science Citation Index databases between 1966 and 1994, scanning the bibliography of known primary studies and review articles, and contacting experts in the field. After independent, blind assessment, nine of 149 originally identified studies met the inclusion criteria and were selected. We assessed study quality independently. Outcome data from each study were pooled and statistically summarized.

Results: There was a marginal improvement in pregnancy rate with antiestrogen treatment (odds ratio, 1.6; 95% confidence interval, 0.9 to 2.6). Sensitivity analyses on the basis of methodologic quality demonstrated that poor-quality studies produced a positive effect with treatment, whereas no benefit was observed with high-quality studies.

Conclusions: The results of a meta-analysis are influenced by the quality of the primary studies included. Methodologically, poor studies tend to exaggerate the overall estimate of treatment effect and may lead to incorrect inferences.

Keywords: Randomized Controlled Trials, Design Affects Outcomes, Clomiphene Citrate, Male-Infertility, Sperm Parameters, Oligospermic Men, Tamoxifen, Therapy, Metaanalysis, Oligozoospermia

? Astin, J.A., Marie, B., Pelletier, K.R., Hansen, E. and Haskell, W.L. (1998), A review of the incorporation of complementary and alternative medicine by mainstream physicians. *Archives of Internal Medicine*, **158** (21), 2303-2310.

Full Text: [A\Arc Int Med158, 2303.pdf](A/Arc%20Int%20Med158,%202303.pdf)

Abstract: Background: Studies suggest that between 30% and 50% of the adult population in industrialized nations use some form of complementary and/or alternative medicine (CAM) to prevent or treat a variety of health-related problems.

Method: A comprehensive literature search identified 25 surveys conducted between 1982 and 1995 that examined the practices and beliefs of conventional physicians with regard to 5 of the more prominent CAM therapies: acupuncture, chiropractic, homeopathy, herbal medicine, and massage. Six studies were excluded owing to their methodological. limitations.

Results: Across surveys, acupuncture had the highest rate of physician referral (43%) among the 5 CAM therapies, followed by chiropractic (40%) and massage (21%). Rates of CAM practice by conventional physicians varied from a low of 9% for homeopathy to a high of 19% for chiropractic and massage therapy. Approximately half of the surveyed physicians believed in the efficacy of acupuncture (51%), chiropractic (53%), and massage (48%), while fewer believed in the value of homeopathy (26%) and herbal approaches (13%).

Conclusions: This review suggests that large numbers of physicians are either referring to or practicing some of the more prominent and well-known forms of CAM and that many physicians believe that these therapies are useful or efficacious. These data vary considerably across surveys, most likely because of regional differences and sampling methods, suggesting the need for more rigorous surveys using national, representative samples. Finally, outcomes studies are needed so that physicians can make decisions about the use of CAM based on scientific evidence of efficacy rather than on regional economics and cultural norms.

Keywords: General-Practitioners, Family Physicians, Hospital Doctors, Attitudes, Therapies, Prevalence, Behaviors, Students, Beliefs, Disease

Barnes, J., Abbot, N.C., Harkness, E.F. and Ernst, E. (1999), Articles on complementary medicine in the mainstream medical literature: An investigation of MEDLINE, 1966 through 1996. *Archives of Internal Medicine*, **159** (15), 1721-1725.

Full Text: [1999\Arc Int Med159, 1721.pdf](1999/Arc%20Int%20Med159,%201721.pdf)

Abstract: Objective To investigate the growth of interest, if any, in complementary or alternative medicine by the professional scientific community from the number of MEDLINE-listed and clinical trial–type articles for January 1, 1966, through December 31, 1996.

Methods Systematic literature searches of the MEDLINE database, using the expanded terms “alternative medicine,” “traditional medicine,” “acupuncture,” “homeopathy,” and “chiropractic,” were conducted in January 1998 to evaluate the number of all articles. The number of clinical trial–type articles on the above was obtained by conducting searches for those indexed as 1 or more of the following publication types: clinical trial; clinical trial phase 1, 2, 3, or 4; controlled clinical trial; meta-analysis; randomized controlled trial; and limited to “human” trials only.

Results Articles indexed as alternative medicine formed a small proportion (0.4%) of the total number of MEDLINE-listed articles throughout the period studied. From 1966 through 1996, the total number of articles listed in MEDLINE rose significantly to a peak of 400,000 additions per annum in 1996 (*r* = 0.97; *P*<.001). By contrast, the number of articles indexed under alternative medicine rose progressively only from 1972 through 1986 and since then has been relatively stable at around 1500 additions per annum. For this period, the proportion of clinical trial–type alternative medicine articles was low (mean, 2.1% per annum) but increased significantly from 1987 through 1996, reaching around 10% of the total in 1996 (*r* = 0.79; *P*<.001). Patterns of growth in the number of publications for individual therapies have varied during the period studied, and clinical trial–type articles form only a small part of any increase.

Conclusions Interest in and awareness of complementary medicine among orthodox health care professionals has increased in the past 30 years. The increase in the number and proportion of reports of clinical trials indicates an increasing level of original research activity in complementary medicine and suggests a trend toward an evidence-based approach in this discipline. The cumulative number of clinical trial–type articles is small, however, and more high-quality original research in complementary medicine is required.

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Full Text: [2005\Arc Int Med165, 986.pdf](2005/Arc%20Int%20Med165,%20986.pdf)

Abstract: Background: Numerous trials of the efficacy of brief alcohol intervention have been conducted in various settings among individuals with a wide range of alcohol disorders. Nevertheless, the efficacy of the intervention is likely to be influenced by the context. We evaluated the evidence of efficacy of brief alcohol interventions aimed at reducing long-term alcohol use and related harm in individuals attending primary care facilities but not seeking help for alcohol-related problems. Methods: We selected randomized trials reporting at least I outcome related to alcohol consumption conducted in outpatients who were actively attending primary care centers or seeing providers. Data sources were the Cochrane Central Register of Controlled Trials, MEDLINE, PsycINFO, ISI Web of Science, ETOH database, and bibliographies of retrieved references and previous reviews. Study selection and data abstraction were performed independently and in duplicate. We assessed the validity of the studies and performed a meta-analysis of studies reporting alcohol consumption at 6 or 12 months of follow-up. Results: We examined 19 trials that included 5639 individuals. Seventeen trials reported a measure of alcohol consumption, of which 8 reported a significant effect of intervention. The adjusted intention-to-treat analysis showed a mean pooled difference of -38 g of ethanol (approximately 4 drinks) per week (95% confidence interval, -51 to -24g/wk) in favor of the brief alcohol intervention group. Evidence of other outcome measures was inconclusive. Conclusion: Focusing on patients in primary care, our systematic review and meta-analysis indicated that brief alcohol intervention is effective in reducing alcohol consumption at 6 and 12 months.

Keywords: Alcohol, Alcohol Consumption, Analysis, Benefit-Cost-Analysis, Brief Physician Advice, Carbohydrate-Deficient Transferrin, Cochrane, Drinking, Efficacy, Ethanol, Follow-up, Hazardous Drinkers, Heavy Drinkers, Intervention, Interventions, ISI, Medline, Meta-Analysis, Methods, Outcome, Primary, Primary Care, Primary-Health-Care, Problem Drinkers, Randomized Controlled Trial, Reduction, Review, Routine General-Practice, Science, Systematic, Systematic Review, Validity, Web of Science

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Full Text: [2006\Arc Int Med166, 1256.pdf](2006/Arc%20Int%20Med166,%201256.pdf)

Abstract: Background: Observational and some experimental data suggest that low intake of vitamin K may be associated with an increased risk of fracture. Objective: To assess whether oral vitamin K (phytonadione and menaquinone) supplementation can reduce bone loss and prevent fractures. Data Sources: The search included the following electronic databases: MEDLINE (1966 to June 2005), EMBASE (1980 to June 2005), the Cochrane Library (issue 2, 2005), the ISI Web of Science (1945 to June 2005), the National Research Register (inception to the present), Current Controlled Trials, and the Medical Research Council Research Register. Study Selection: Randomized controlled trials that gave adult participants oral phytonadione and menaquinone supplements for longer than 6 months were included in this review. Data Extraction: Four authors extracted data on changes in bone density and type of fracture. All articles were double screened and double data extracted. Data Synthesis: Thirteen trials were identified with data on bone loss, and 7 reported fracture data. All studies but 1 showed an advantage of phytonadione and menaquinone in reducing bone loss. All 7 trials that reported fracture effects were Japanese and used menaquinone. Pooling the 7 trials with fracture data in a meta-analysis, we found an odds ratio (OR) favoring menaquinone of 0.40 (95% confidence interval [CI], 0.25-0.65) for vertebral fractures, an OR of 0.23 (95% CI, 0.12-0.47) for hip fractures, and an OR of 0.19 (95% CI, 0.11-0.35) for all nonvertebral fractures. Conclusions: This systematic review suggests that supplementation with phytonadione and menaquinone-4 reduces bone loss. In the case of the latter, there is a strong effect on incident fractures among Japanese patients.

Keywords: Adult, Authors, Bone, Bone Loss, Bone-Mineral Density, Calcium, Cochrane, Databases, Elderly-Women, EMBASE, Extraction, Fracture, Hip Fracture, ISI, Japanese, Medical Research, Medline, Men, Menatetrenone, Meta-Analysis, Osteoporosis, Postmenopausal Women, Prevention, Randomized Controlled Trials, Ratio, Research, Review, Risk, Science, Sources, Supplementation, Systematic, Systematic Review, Web of Science

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Full Text: [2007\Arc Int Med167, 335.pdf](2007/Arc%20Int%20Med167,%20335.pdf)

Abstract: Background: There is no consensus whether tobacco smoking increases risk of tuberculosis ( TB) infection, disease, or mortality. Whether this is so has substantial implications for tobacco and TB control policies. Objective: To quantify the relationship between active tobacco smoking and TB infection, pulmonary disease, and mortality using meta-analytic methods. Methods: Eight databases (PUBMED, Current Contents, BIOSIS, EMBASE, Web of Science, Centers for Disease Control and Prevention Tobacco Information and Prevention Source [TIPS], Smoking and Health Database [ Institute for Science and Health], and National Library of Medicine Gateway) and the Cochrane Tobacco Addiction Group Trials Register were searched for relevant articles published between 1953 and 2005. Study Selection: Included were epidemiologic studies that provided a relative risk (RR) estimate for the association between TB (infection, pulmonary disease, or mortality) and active tobacco smoking stratified by (or adjusted for) at least age and sex and a corresponding 95% confidence interval (CI) (or data for calculation). Excluded were reports of extrapulmonary TB, studies conducted in populations prone to high levels of smoking or high rates of TB, and case-control studies in which controls were not representative of the population that generated the cases, as well as case series, case reports, abstracts, editorials, and literature reviews. Data Extraction: Twenty-four studies were included in the meta-analysis. Extracted data included study design, population and diagnostic details, smoking type, and TB outcomes. Data Synthesis: A random-effects model was used to pool data across studies. Separate analyses were performed for TB infection (6 studies), TB disease (13 studies), and TB mortality (5 studies). For TB infection, the summary RR estimate was 1.73 (95% CI, 1.46-2.04); for TB disease, estimates ranged from 2.33 (95% CI, 1.97-2.75) to 2.66 (95% CI, 2.15- 3.28). This suggests an RR of 1.4 to 1.6 for development of disease in an infected population. The TB mortality RRs were mostly below the TB disease RRs, suggesting no additional mortality risk from smoking in those with active TB. Conclusions: The meta- analysis produced evidence that smoking is a risk factor for TB infection and TB disease. However, it is not clear that smoking causes additional mortality risk in persons who already have active TB. Tuberculosis control policies should in the future incorporate tobacco control as a preventive intervention.

Keywords: Addiction, Analysis, Association, Case Reports, Case Series, Case-Control Studies, Cigarette-Smoking, Cochrane, Control, Databases, Deaths, Development, Disease, EMBASE, Epidemiologic Studies, Extraction, Health, Hong-Kong, India, Infection, Intervention, Literature, Meta-Analysis, Methods, Model, Mortality, Outcomes, Policies, Prevalence, PUBMED, Pulmonary Tuberculosis, Relative Risk, Review, Risk, Science, Smoking, Systematic, Systematic Review, Tb, Tobacco, Tobacco Control, Tuberculosis, Verbal Autopsy, Web of Science

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Full Text: [2007\Arc Int Med167, 626.pdf](2007/Arc%20Int%20Med167,%20626.pdf)

Abstract: Background: Epidemiological evidence suggests blood pressure-lowering effects of cocoa and tea. We undertook a meta-analysis of randomized controlled trials to determine changes in systolic and diastolic blood pressure due to the intake of cocoa products or black and green tea. Methods: MEDLINE, EMBASE, SCOPUS, Science Citation Index, and the Cochrane Controlled Trials Register were searched from 1966 until October 2006 for studies in parallel group or crossover design involving 10 or more adults in whom blood pressure was assessed before and after receiving cocoa products or black or green tea for at least 7 days. Results: Five randomized controlled studies of cocoa administration involving a total of 173 subjects with a median duration of 2 weeks were included. After the cocoa diets, the pooled mean systolic and diastolic blood pressure were -4.7 mm Hg (95% confidence interval [CI], -7.6 to -1.8 mm Hg; P=.002) and -2.8 mm Hg (95% Cl, -4.8 to -0.8 mm Hg; P=.006) lower, respectively, compared with the cocoa-free controls. Five studies of tea consumption involving a total of 343 subjects with a median duration of 4 weeks were selected. The tea intake had no significant effects on blood pressure. The estimated pooled changes were 0.4 mm Hg (95% CI, -1.3 to 2.2 mm. Hg; P=.63) in systolic and -0.6 mm Hg (95% Cl, -1.5 to 0.4 mm Hg; P=38) in diastolic blood pressure compared with controls. Conclusion: Current randomized dietary studies indicate that consumption of foods rich in cocoa may reduce blood pressure, while tea intake appears to have no effect.

Keywords: Adults, Black Tea, Blood, Blood Pressure, Cardiovascular-Disease, Citation, Clinical-Trials, Cochrane, Controlled Studies, Coronary-Heart-Disease, Dependent Vasodilation, Design, Embase, Flavanol-Rich Cocoa, Green Tea, Insulin-Resistance, Medline, Meta Analysis, Meta-Analysis, Methods, Platelet-Function, Pressure, Randomized Controlled Trials, Science, Science Citation Index, Scopus, Systolic Hypertension

Notes: highly cited

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Full Text: [2007\Arc Int Med167, 1730.pdf](2007/Arc%20Int%20Med167,%201730.pdf)

Abstract: Background: Ecological and observational studies suggest that low vitamin D status could be associated with higher mortality from life-threatening conditions including cancer, cardiovascular disease, and diabetes mellitus that account for 60% to 70% of total mortality in high-income countries. We examined the risk of dying from any cause in subjects who participated in randomized trials testing the impact of vitamin D supplementation (ergocalciferol [vitamin D-2] or cholecalciferol [vitamin D-3]) on any health condition. Methods: The literature up to November 2006 was searched without language restriction using the following databases: PubMed, ISI Web of Science (Science Citation Index Expanded), EMBASE, and the Cochrane Library. Results: We identified 18 independent randomized controlled trials, including 57 311 participants. A total of 4777 deaths from any cause occurred during a trial size-adjusted mean of 5.7 years. Daily doses of vitamin D supplements varied from 300 to 2000 IU. The trial size-adjusted mean daily vitamin D dose was 528 IU. In 9 trials, there was a 1.4-to 5.2-fold difference in serum 25-hydroxyvitamin D between the intervention and control groups. The summary relative risk for mortality from any cause was 0.93(95% confidence interval, 0.87-0.99). There was neither indication for heterogeneity nor indication for publication biases. The summary relative risk did not change according to the addition of calcium supplements in the intervention. Conclusions: Intake of ordinary doses of vitamin D supplements seems to be associated with decreases in total mortality rates. The relationship between baseline vitaminD status, dose of vitamin D supplements, and total mortality rates remains to be investigated. Population-based, placebo-controlled randomized trials with total mortality as the main end point should be organized for confirming these findings.

Keywords: Calcium, Calcium Supplementation, Cancer, Cancer Incidence, Cardiovascular-Disease, Change, Citation, Databases, Dose, Double-Blind, Elderly-Women, Groups, Health, Heterogeneity, Hip Fracture, Impact, Indication, Intervention, ISI, ISI Web, ISI Web of Science, Language, Literature, Meta-Analysis, Mortality, Oral Vitamin-D-3, Placebo-Controlled Trial, Postmenopausal Women, Publication, Publication Bias, Pubmed, Randomized Controlled Trials, Risk, Science, Science Citation Index, Web of Science

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Full Text: [2008\Arc Int Med168, 14.pdf](2008/Arc%20Int%20Med168,%2014.pdf)

Keywords: Thromboembolism

? Koshman, S.L., Charrois, T.L., Simpson, S.H., McAlister, F.A. and Tsuyuki, R.T. (2008), Pharmacist care of patients with heart failure: A systematic review of randomized trials. *Archives of Internal Medicine*, **168** (7), 687-694.

Abstract: Background: While the role of multidisciplinary teams in the treatment of patients with heart failure (HF) is well established, there is less evidence to characterize the role of individual team members. To clarify the role of pharmacists in the care of patients with HF, we performed a systematic review evaluating the effect of pharmacist care on patient outcomes in HF. Methods: We searched PUBMED, MEDLINE, EMBASE, International Pharmaceutical Abstracts, Web of Science, Scopus, Dissertation Abstracts, CINAHL, Pascal, and Cochrane Central Register of Controlled Trials for controlled studies from database inception to August 2007. We included randomized controlled trials that evaluated the impact of pharmacist care activities on patients with HF (in both inpatient and outpatient settings). Summary odds ratios (ORs) with 95% confidence intervals (CIs) were calculated using a random-effects model for rates of all-cause hospitalization, HF hospitalization, and mortality. Results: A total of 12 randomized controlled trials (2060 patients) were identified. Extent of pharmacist involvement varied among studies, and each study intervention was categorized as pharmacist-directed care or pharmacist collaborative care using a priori definitions and feedback from primary study authors. Pharmacist care was associated with significant reductions in the rate of all-cause hospitalizations (11 studies [2026 patients]) (OR, 0.71; 95% CI, 0.54-0.94) and HF hospitalizations (11 studies [1977 patients]) (OR, 0.69; 95% CI, 0.51-0.94), and a nonsignificant reduction in mortality (12 studies [2060 patients]) (OR, 0.84; 95% CI, 0.61-1.15). Pharmacist collaborative care led to greater reductions in the rate of HF hospitalizations (OR, 0.42; 95% CI, 0.24-0.74) than pharmacist-directed care (OR, 0.89; 95% Cl, 0.68-1.17). Conclusions: Pharmacist care in the treatment of patients with HF greatly reduces the risk of all-cause and HF hospitalizations. Since hospitalizations associated with HF are a major public health problem, the incorporation of pharmacists into HF care teams should be strongly considered.

Keywords: Activities, Authors, Burden, Cochrane, Confidence Intervals, Controlled Studies, Definitions, EMBASE, Feedback, Hospitalization, Hospitalizations, Illness, Impact, Intervention, Interventions, Involvement, Management, Medline, Methods, Model, Mortality, Outcomes, Patient Outcomes, Pharmaceutical Care, Pharmacist, Pharmacists, Primary, Program, Public Health, PUBMED, Randomized Controlled Trials, Review, Risk, Science, Scopus, Systematic, Systematic Review, Treatment, Web of Science

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Abstract: Background: The relative benefits and harms of low-molecular-weight heparin (LMWH) and unfractionated heparin (UFH) are required for judgments regarding the appropriate perioperative thromboprophylaxis in patients with cancer. We systematically reviewed the literature to quantify these effects. Methods: The comprehensive searches included (1) an electronic search of MEDLINE, EMBASE, ISI the Web of Science, and CENTRAL (The Cochrane Central Register of Controlled Trials); (2) a hand search of relevant conference proceedings; (3) a reference check of included trials; and (4) use of the PUBMED “Related Articles” feature. Outcomes of interest included mortality, deep venous thrombosis, pulmonary embolism, bleeding complications, and thrombocytopenia. Results: of 3986 identified citations, we included 14 randomized clinical trials in the meta-analysis (all using preoperative prophylactic anticoagulation). The overall methodological quality was moderate. The meta-analysis showed no differences in mortality in patients receiving LMWH compared with UFH (relative risk [RR], 0.89; 95% confidence interval [CI], 0.61-1.28) or in clinically suspected deep venous thrombosis (RR, 0.73; 95% CI, 0.23-2.28). In a post hoc analysis including all studies assessing deep venous thrombosis, irrespective of the diagnostic strategy used, LMWH was superior to UFH (RR, 0.72; 95% CI, 0.55-0.94). There were no differences in rates of pulmonary embolism (RR, 0.60; 95% CI, 0.22-1.64), minor bleeding (RR, 0.88; 95% CI, 0.47-1.66), or major bleeding (RR, 0.95; 95% CI, 0.51-1.77). Conclusions: We found no differences in mortality in patients with cancer receiving perioperative thromboprophylaxis with LMWH vs UFH. Further trials are needed to more carefully evaluate the benefits and harms of different heparin thromboprophylaxis strategies in this population.

Keywords: Abdominal-Surgery, Analysis, Cancer, Citations, Clinical Trials, Cochrane, Colorectal Surgery, Deep-Vein Thrombosis, Double-Blind Trial, EMBASE, General-Surgery, Gynecological Surgery, Heparin, Interest, ISI, Literature, Low-Dose Heparin, Low-Molecular-Weight, Medline, Meta-Analysis, Methods, Mortality, Outcomes, Postoperative Thrombosis, PUBMED, Pulmonary Embolism, Randomized Clinical Trials, Relative Risk, Review, Risk, Science, Standard Heparin, Strategy, Systematic, Systematic Review, Thrombosis, Venous Thromboembolism, Venous Thrombosis, Web of Science

? Herring, M.P., O’Connor, P.J. and Dishman, R.K. (2010), The effect of exercise training on anxiety symptoms among patients: A systematic review. *Archives of Internal Medicine*, **170** (4), 321-331.

Abstract: Background: Anxiety often remains unrecognized or untreated among patients with a chronic illness. Exercise training may help improve anxiety symptoms among patients. We estimated the population effect size for exercise training effects on anxiety and determined whether selected variables of theoretical or practical importance moderate the effect. Methods: Articles published from January 1995 to August 2007 were located using the Physical Activity Guidelines for Americans Scientific Database, supplemented by additional searches through December 2008 of the following databases: Google Scholar, MEDLINE, PsycINFO, PUBMED, and Web of Science. Forty English-language articles in scholarly journals involving sedentary adults with a chronic illness were selected. They included both an anxiety outcome measured at baseline and after exercise training and random assignment to either an exercise intervention of 3 or more weeks or a comparison condition that lacked exercise. Two co-authors independently calculated the Hedges d effect sizes from studies of 2914 patients and extracted information regarding potential moderator variables. Random effects models were used to estimate sampling error and population variance for all analyses. Results: Compared with no treatment conditions, exercise training significantly reduced anxiety symptoms by a mean effect Delta of 0.29 (95% confidence interval, 0.23-0.36). Exercise training programs lasting no more than 12 weeks, using session durations of at least 30 minutes, and an anxiety report time frame greater than the past week resulted in the largest anxiety improvements. Conclusion: Exercise training reduces anxiety symptoms among sedentary patients who have a chronic illness.

Keywords: Adults, Aerobic Exercise, Anxiety, Articles, Cancer-Patients, Cardiac Rehabilitation Program, Cardiorespiratory Fitness, Chronic Illness, Coronary-Artery-Disease, Databases, Exercise, Google Scholar, Information, Intervention, Journals, Medline, Methods, Multiple-Sclerosis Patients, Outcome, Physical Activity, Physical-Activity, Primary-Care, PUBMED, Quality-of-Life, Randomized Controlled-Trial, Review, Science, Symptoms, Systematic, Systematic Review, Training, Treatment, Web of Science

? Young, L.B., Chan, P.S., Lu, X., Nallamothu, B.K., Sasson, C. and Cram, P.M. (2011), Impact of telemedicine intensive care unit coverage on patient outcomes: A systematic review and meta-analysis. *Archives of Internal Medicine*, **171** (6), 498-506.

Abstract: Background: Although remote intensive care unit (ICU) coverage is rapidly being adopted to enhance access to intensivists, its effect on patient outcomes is unclear. We conducted a meta-analysis to examine the impact of telemedicine ICU (tele-ICU) coverage on mortality and length of stay (LOS). Methods: We conducted a systematic review of studies published from January 1, 1950, through September 30, 2010, using PUBMED, CINAHL (Cumulative Index to Nursing and Allied Health Literature), Global Health, Web of Science, the Cochrane Library, and conference abstracts. We included studies that reported data on the primary outcomes of ICU and in-hospital mortality or on the secondary outcomes of ICU and hospital LOS. Results: We identified 13 eligible studies involving 35 ICUs. All the studies used a before-and-after design. The studies included 41 374 patients (15 667 pre-tele-ICU and 25 707 post-tele-ICU patients). Tele-ICU coverage was associated with a reduction in ICU mortality (pooled odds ratio, 0.80; 95% confidence interval [CI], 0.66-0.97; P = .02) but not in-hospital mortality for patients admitted to an ICU (pooled odds ratio, 0.82; 95% CI, 0.65-1.03; P = .08). Similarly, tele-ICU coverage was associated with a reduction in ICU LOS (mean difference, -1.26 days; 95% CI, -2.21 to -0.30; P = .01) but not hospital LOS(mean difference, -0.64; 95% CI, -1.52 to 0.25; P = .16). Conclusion: Tele-ICU coverage is associated with lower ICU mortality and LOS but not with lower in-hospital mortality or hospital LOS.

Keywords: Care, Cochrane, Coverage, Critically-Ill Patients, Economic Outcomes, Health, Health System, Hospital, Icu, Impact, Intensive, Intensive Care, Intensive Care Unit, Length of Stay, Length-of-Stay, Management, Mechanical Ventilation, Meta Analysis, Meta-Analysis, Metaanalysis, Methods, Mortality, Nursing, Outcomes, Patient Outcomes, Primary, Program, PUBMED, Ratio, Review, Science, Systematic, Systematic Review, Web of Science

? Rose, K.D., Ross, J.S. and Horwitz, L.I. (2011), Advanced access scheduling outcomes: A systematic review. *Archives of Internal Medicine*, **171** (13), 1150-1159.

Abstract: Background: Advanced (“open”) access scheduling, which promotes patient-driven scheduling in lieu of prearranged appointments, has been proposed as a more patient-centered appointment method and has been widely adopted throughout the United Kingdom, within the US Veterans Health Administration, and among US private practices. Objective: To describe patient and physician and/or practice outcomes resulting from implementation of advanced access scheduling in the primary care setting. Data Sources: Comprehensive search of electronic databases (MEDLINE, Scopus, Web of Science) through August, 2010, supplemented by reference lists and gray literature. Study Selection: Studies were assessed in duplicate, and reviewers were blinded to author, journal, and date of publication. Controlled and uncontrolled English-language studies of advanced access implementation in primary care were eligible if they specified methods and reported outcomes data. Data Extraction: Two reviewers collaboratively assessed risk for bias by using the Cochrane Effective Practice and Organisation of Care Group Risk of Bias criteria. Data were independently extracted in duplicate. Data Synthesis: Twenty-eight articles describing 24 studies met eligibility criteria. All studies had at least 1 source of potential bias. All 8 studies evaluating time to third-next-available appointment showed reductions (range of decrease, 1.1-32 days), but only 2 achieved a third-next-available appointment in less than 48 hours (25%). No-show rates improved only in practices with baseline no-show rates higher than 15%. Effects on patient satisfaction were variable. Limited data addressed clinical outcomes and loss to follow-up. Conclusions: Studies of advanced access support benefits to wait time and no-show rate. However, effects on patient satisfaction were mixed, and data about clinical outcomes and loss to follow-up were lacking.

Keywords: Administration, Appointment Systems, Author, Bias, Care, Cochrane, Databases, Discrete-Choice Experiment, Extraction, Follow-up, General-Practice, Health, Health-Care, Impact, Implementation, Journal, Literature, Measuring Continuity, Medline, Outcomes, Patient Satisfaction, Practice, Primary, Primary Care, Primary-Care Access, Publication, Quality, Review, Risk, Science, Scopus, Sources, Systematic, Systematic Review, United Kingdom, US, Web of Science

? Herring, M.P., Puetz, T.W., O’Connor, P.J. and Dishman, R.K. (2012), Effect of exercise training on depressive symptoms among patients with a chronic illness a systematic review and meta-analysis of randomized controlled trials. *Archives of Internal Medicine*, **172** (2), 101-111.

Full Text: 2012\Arc Int Med172, 101.pdf

Abstract: Background: Physical inactivity and comorbid depressive symptoms are prevalent among patients with a chronic illness. To our knowledge, randomized controlled trials of the effects of exercise training on depressive symptoms among patients with a chronic illness have not been systematically reviewed. We estimated the population effect of exercise training on depressive symptoms and determined whether the effect varied according to patient characteristics and modifiable features of exercise exposure and clinical settings. Methods: Articles published before June 1, 2011, were located using the Physical Activity Guidelines for Americans Scientific Database, Google Scholar, MEDLINE, PsycINFO, PubMed, and Web of Science. Ninety articles involving 10 534 sedentary patients with a chronic illness were selected. Included articles required (1) randomized allocation to an exercise intervention or nonexercise comparison condition and (2) a depression outcome assessed at baseline and at mid-and/or postintervention. Hedges d effect sizes were computed, study quality was evaluated, and random effects models were used to estimate sampling error and population variance of the observed effects. Results: Exercise training significantly reduced depressive symptoms by a heterogeneous mean effect size delta (Delta) of 0.30 (95% CI, 0.25-0.36). Larger antidepressant effects were obtained when (1) baseline depressive symptoms were higher, (2) patients met recommended physical activity levels, and (3) the trial primary outcome, predominantly function related, was significantly improved among patients having baseline depressive symptoms indicative of mild-to-moderate depression. Conclusions: Exercise reduces depressive symptoms among patients with a chronic illness. Patients with depressive symptoms indicative of mild-to-moderate depression and for whom exercise training improves function-related outcomes achieve the largest antidepressant effects.

Keywords: Al, American-Heart-Association, Articles, Author, Cardiac Rehabilitation, Chronic Illness, Database, Depression, Exercise, Exposure, Fibromyalgia Syndrome, Google Scholar, Intervention, Knowledge, Medical Outcomes, Medline, Meta Analysis, Meta-Analysis, Methods, Myocardial-Infarction, Obstructive Pulmonary-Disease, Outcome, Outcomes, Patients, Physical Activity, Physical-Activity, Primary, Primary-Care Patients, Public, Public-Health, Pubmed, Quality, Randomized Controlled Trials, Review, Science, Sports-Medicine, Symptoms, Systematic, Systematic Review, Training, USA, Web of Science, Web-of-Science

# Title: Archives of Iranian Medicine

Full Journal Title: [Archives of Iranian Medicine](http://www.ams.ac.ir/AIM/archive.htm)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mohammadhassanzadeh, H., Samadikuchaksaraei, A., Shokraneh, F., Valinejad, A., bolghasem-Gorji, H. and Yue, C. (2010), A bibliometric overview of 30 years of medical sciences productivity in Iran. *Archives of Iranian Medicine*, **13** (4), 313-317.

Full Text: [2010\Arc Ira Med13, 313.pdf](2010/Arc%20Ira%20Med13,%20313.pdf)

Abstract: Objectives: The number of medical universities and their faculty members has significantly increased in Iran during the last 30 years. This development has led to the training of a large number of healthcare professionals. But, its effect on medical sciences productivity has not yet been fully analyzed. Here, we use a bibliometric analysis to assess the current status of Iranian medical sciences production in different subject areas. Methods: The bibliographic data of Iranian medical subjects during the years 1978 - 2008 were collected from the Science Citation Index Expanded database and analyzed according to publication number, different medical subject areas, citations and the annual Iranian mid-year population. Results: It was shown that Iranian scientists have established good collaboration with developed countries. The numbers of medical publications, even after normalization to the population size, and citations of these publications have significantly increased in recent years. It has also been shown that pharmacologic research constitutes the major theme in the Iranian medical research system and thus enjoys the highest rate of growth. Conclusion: Strengthening of the non-pharmacologic research infra-structure is advised for both basic and clinical departments, keeping in mind the existing successful research model of pharmacology in Iran.

Keywords: Bibliometric, Bibliometric Analysis, Bibliometry, Biomedical-Research, Citation, Iran, Medicine, Production, Publication, Publications, Research, Science, Science Citation Index, Science Citation Index Expanded

? Borzabadi, S. and Etemadi, A. (2011), Scientometric analysis of the major Iranain medical universities. *Archives of Iranian Medicine*, **14** (3), 222-223.

Full Text: 2011\Arc Ira Med14, 222.pdf

# Title: Archives des Maladies Professionnelles de Medecine du Travail et de Securite Sociale

Full Journal Title: Archives des Maladies Professionnelles de Medecine du Travail et de Securite Sociale

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Trouve, M., Hermann, S. and Andlauer, P. (1973), Informatics and Occupational Medicine. *Archives des Maladies Professionnelles de Medecine du Travail et de Securite Sociale*, **34** (9), 555-556.

# Title: Archives of Medical Research

Full Journal Title: [Archives of Medical Research](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6182&_auth=y&_acct=C000024058&_version=1&_urlVersion=0&_userid=4191814&md5=df1447bf9f51eebb4d26c90636201c12)

ISO Abbreviated Title: Arch. Med. Res.

JCR Abbreviated Title: Arch Med Res

ISSN: 0188-0128

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Elsevier Science Inc

Publisher Address: 655 Avenue of The Americas, New York, NY 10010

Subject Categories:

Medicine, Research & Experimental: Impact Factor

? Lozoya, X., Rivera-Arce, E., Domínguez, F., Arellano, M.L. and Muñoz, O. (1995), *Archives of Medical Research*: An historical and subject coverage overview. *Archives of Medical Research*, **26**, S1-S5.

Full Text: 1995\Arc Med Res26, S1.pdf

Abstract: A bibliometric study about the subject content of the articles published in the Mexican scientific journal Archives of Medical Research is reported. The journal, published by the Mexican Institute of Social Security (IMSS), is comprised of 100 regular issues and 12 special supplements giving a total amount of 1,424 reports on medical research performed in Mexico during the last 25 years. According to the type of studies published during this period, we found that there is a similar percent of biomedical and clinical reports in the journal (47 and 42%, respectively) and a low proportion of epidemiological and medical educational reports (8 and 3%, respectively). Six thematic areas of research have been permanently published in this journal: investigations on infectious and neurological diseases being the areas mainly represented (34% of the total, corresponding to 17% in each area), followed by studies in reproductive biology (10%) and endocrine (7%), oncological (5%) and cardiovascular (3%) diseases. The tendency of the subjects covered by the journal during this period shows an increment in reports on infectious and parasitic disorders together with an increase in publications related to medicinal plant pharmacology; reproductive biology and endocrine studies show also an increasing tendency. On the other hand, a moderate decrease in studies related to neurological, oncological and cardiovascular diseases is observed, The origin of contributions during the last five years has balanced the proportion of papers published from IMSS scientists, other Mexican biomedical researchers and foreign contributions, thus reflecting favorably the recent changes in the journal’s policies. This journal represents a clear example of a scientific publication edited in a developing country, originating as a national publication that evolved progressively into an international biomedical journal.

Keywords: Archives of Medical Research, Bibliometric, Bibliometric Study, Biology, Biomedical, Cardiovascular, Cardiovascular Diseases, Changes, Clinical, Content, Country, Coverage, Developing, Developing Country, Diseases, Foreign, International, Investigations, Journal, Medical, Medical Research, Medicinal Plant, Mexican, Mexican Scientific Journal, Mexico, National, Neurological, Origin, Papers, Pharmacology, Plant, Policies, Publication, Publications, Recent Changes, Reproductive, Reproductive Biology, Research, Scientific Journal, SI

? Poo, J.L., Romero, R.R., Robles, J.A., Montemayor, A.C., Isoard, F., Estanes, A. and Uribe, M. (1997), Diagnostic value of the copper/zinc ratio in digestive cancer: A case control study. *Archives of Medical Research*, **28** (2), 259-263.

Abstract: The aim of this study was to assess the accuracy of the copper/zinc ratio (Cu/Zn ratio) in the evaluation of a large group of patients with digestive cancer compared to gender and age-matched central subjects. A total of 282 patients was studied and separated into three groups: group I (n = 75), patients with digestive cancer, group II (n = 112), patients with benign digestive disease, and group III (n = 95), healthy subjects. Serum levels of copper and zinc were measured by atomic absorption spectrophotometry. The results showed that the serum levels of copper (mg/dL) in patients with digestive cancer (91.6±27.3, p < 0.05) were significantly higher thanin patients with benign digestive disease (75.8±19.8) or healthy subjects (54.4±8.9) and the serum levels of zinc (mg/dl) were significantly lower (68.7±21.9, p < 0.05) compared to benign digestive disease patients (80.1±18.7) or healthy subjects (100±11.4 mg/dl). The Cu/Zn ratio was also significantly higher in patients with digestive cancer (1.45±.58, p < 0.05) than those with benign digestive disease (0.95±0.28) or healthy subjects (0.55±0.13). Considering a cutoff value of 0.87, the sensitivity of the copper/zinc ratio was 82.2%, with a specificity of 65.7%, a positive predictive value of 45.8% and a negative predictive value of 91.3%. In conclusion, Cu/Zn ratio was found to be considerably higher in patients with digestive cancer compared to age-and gender-matched controls, with a sensitivity of 82.2% that might be useful in the evaluation of suspected.

# Title: Archives of Medical Science

Full Journal Title: Archives of Medical Science

ISO Abbreviated Title:

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Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Hasani-Ranjbar, S., Larijani, B. and Abdollah, M. (2008), A systematic review of Iranian medicinal plants useful in diabetes mellitus. *Archives of Medical Science*, **4** (3), 285-292.

Abstract: Introduction: This review focuses on the efficacy and safety of Iranian medicinal plants found effective in the management of diabetes in humans and animals. Material and methods: EMBASE, Scopus, PUBMED, Web of Science, Google Scholar, and IranMedex databases were searched up to 8 October 2007. The search terms were “diabetes” and “plant”, “herb”, “traditional”, and “natural” or “herbal medicine”, limited to Iran. All of the human studies were included. Animal studies with the outcome of blood glucose or serum lipids, antioxidant effect, changes in hepatic enzymes, anti-inflammatory effect, or vascular activity in diabetes were included. Studies performed on cell lines, reviews and letters to editors were excluded. Blood glucose and serum lipids were the key outcomes. Results: Twelve human studies were reviewed for efficacy of plants. These studies showed significant decrease in blood glucose after treatment with Citrullus colocynthus L, Silybum marianum, Psyllium, Teucrium polium, and Pomegranate. Thirty-one animal studies were included showing Walnut leaf, Coriander, Pomegranate, Garlic, Satureja khuzestanica, Phlomis anisodonta, Trigonella foenum graecum, Olive (Oleo europaea L.), Capsicum frutescens, Achillea santolina, Aloe vera, Salvia officinalis, Anathum graveolens, Teucrium polium, Urtica dioica, Morus nigra, Morus alba, Salvia lenifolia benth leaf, and Cynara scolymus to be significantly effective in reduction of blood glucose. Discussion: The present review indicates that some of these plants (Citrullus colocynthus, Silybum marianum, Psyllium, Teucrium polium, and Pomegranate) improve blood hyperglycemia in humans somewhat more effectively than standard chemical drugs used in diabetes. Some of these plants (Garlic, Silybum marianum, Psyllium, Teucrium polium, and Pomegranate) were found to have anti-hyperlipidaemic properties and thus can be supplemented in diabetes. Conclusions: Special attention to these effective medicinal plants will lead us to obtain novel drugs in the management of diabetes mellitus.

Keywords: Attention, Blood, Databases, Diabetes, Diabetes Mellitus, Efficacy, EMBASE, Extracts, Ferula-Szovitsiana, Google Scholar, Herb, Herbal Medicine, Human, Humans, Hyperglycemia, In-Vivo, Insulin, Iran, Khuzestanica Essential Oil, L., Lead, Lipid-Peroxidation, Lipids, Management, Natural Medicine, Outcome, Outcomes, Plant, Plants, Pomegranate, PUBMED, Rats, Review, Safety, Science, SCOPUS, Serum Glucose, Systematic, Systematic Review, Traditional, Treatment, Web of Science

? Rezaie, A., Nikfar, S. and Abdollahi, M. (2010), The place of antibiotics in management of irritable bowel syndrome: A systematic review and meta-analysis. *Archives of Medical Science*, **6** (1), 49-55.

Abstract: Introduction: Irritable bowel syndrome (IBS) is a prevalent gastrointestinal disease with an obscure pathophysiology Current treatments for IBS have modest efficacy at best and the need for a robust therapy for IBS remains unmet As small intestinal bacterial overgrowth has been proposed to be involved in pathogenesis of IBS, antibacterial agents might be efficacious in treatment of this condition Material and methods: PUBMED, EMBASE, Scopus, Google Scholar, Web of Science, and Cochrane Central Register of Controlled Trials were searched for studies comparing the efficacy of antibiotics in the management of IBS and/or IBS type symptoms Data were collected from 1966 to April 2009 Clinical response was considered as our key outcome of interest Results: of five trials that evaluated the effect of antibiotics in IBS, two randomized placebo-controlled trials met the inclusion criteria for the meta-analysis This meta-analysis included 234 patients with IBS-type symptoms of whom 181 met the Rome criteria for IBS The pooled relative risk (RR) for “clinical response in IBS” was 204 (95% confidence interval [Cl] of 123-3.40, p = 00061). The pooled RR for “clinical response in IBS-type symptoms” was 2 06 (95% Cl of 13-3.27, p = 0 002) Conclusions: Although antibiotics have a statistically significant effect on IBS and bloating, given the evidence for the presence of publication bias, methodological variability of the trials and lack of a precise scientific explanation for the role of bacterial overgrowth in the pathophysiology of IBS, use of antibiotics on a regular basis in IBS patients is not recommended.

Keywords: Antibiotics, Bias, Bloating, Cochrane, Controlled-Trials, Disease, Double-Blind, Efficacy, Gastrointestinal, Google Scholar, Healthy Controls, Interest, Intestinal Bacterial Overgrowth, Irritable Bowel Syndrome, Management, Meta-Analysis, Microbiota, Outcome, Pathogenesis, Probiotics, Publication, Publication Bias, PUBMED, Relative Risk, Review, Rifaximin, Risk, Science, Scopus, Symptoms, Systematic, Systematic Review, Therapy, Treatment, Variability, Web of Science

# Title: Archives of Metallurgy and Materials

Full Journal Title: Archives of Metallurgy and Materials

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Štrkalj, A., Rađenović, A. and Malina, J. (2010), The use of metallurgical waste material from aluminium production for the removal of chromium(VI) ions from aqueous solution. *Archives of Metallurgy and Materials*, **55** (2), 449-454.

Full Text: [2010\Arc Met Mat55, 449.pdf](2010/Arc%20Met%20Mat55,%20449.pdf)

Abstract: Carbon anode dust originates from the baking and transport process of anodes for aluminium production and is not recycled. This is non-toxic waste material and can be used as valuable secondary raw material in many processes. In this paper. removal of chromium (VI) ions from aqueous solution by adsorption on carbon anode dust was investigated. The diffusion of chromium ions were tested for film diffusion model, intraparticle diffusion model and heterogeneous diffusion model. It was found that the adsorption process is controlled by intraparticle diffusion. The obtained adsorption capacity for Cr (VI) ions is a good indicator of carbon anode dust potential for use in aqueous sorption system.

Keywords: Adsorption, Carbon Anode Dust, Chromium(VI) Ions, Diffusion, Activated Carbon, Metal-Ions, Adsorption, Equilibrium, Water, Cadmium, Copper, Nickel, Ni(II), Dye

# Title: Archives of Neurology

Full Journal Title: Archives of Neurology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Crapper, D.R., Krishnan, S.S., Deboni, U. and Tomko, G.J. (1975), Aluminum - Possible neurotoxic agent in Alzheimer disease. *Archives of Neurology*, **32** (5), 356-356.

Full Text: -1959\Arc Neu32, 356.pdf

? Huang, X.M., Chen, P., Kaufer, D.I., Troster, A.I. and Poole, C. (2006), Apolipoprotein E and dementia in Parkinson disease: A meta-analysis. *Archives of Neurology*, **63** (2), 189-193.

Abstract: Objective: To understand the relationship of apolipoprotein E (APOE) polymorphism to dementia in Parkinson disease (PD) because the APOE epsilon 4 allele is linked to Alzheimer disease. Data Source: We reviewed MEDLINE, BIOSIS Previews, and ISI Web of Science from January 1, 1966, to May 7, 2004, supplemented by citation analysis from retrieved articles. Study Selection: Case-control studies using clinical or pathologic criteria for PD and dementia, and with complete APOE genotype frequencies data. Data Extraction: We compared estimated prevalence odds ratios for dementia in PD in relation to each allele. We also looked for evidence of heterogeneity and publication bias and performed a stratified analysis on several study characteristics. Data Synthesis: Data analyses suggest publication bias and heterogeneity of source data for the epsilon 4 allele (homogeneity P = .2; Begg and Mazumdar, P = .06; and Egger et al, P =. 1). The estimated odds ratios for development of dementia in PD are 1.6 for epsilon 4 (95% confidence interval, 1.0-2.5); 1.3 for epsilon 2 (95% confidence interval, 0.73-2.4); and 0.54 for epsilon 3 (95% confidence interval, 0.18-1.6). The odds ratio estimates for epsilon 4 were higher for studies published in 1996 or later (2.3 vs 1.0) and for studies conducted outside North American sites (2.4 vs 1. 2). Conclusions: The APOE epsilon 4 allele appears to be associated with a higher prevalence of dementia in PD. Publication bias and heterogeneous source data may, however, confound this conclusion. Confirmatory studies that use standardized and validated diagnostic criteria for dementia in PD are needed.

Keywords: Age, Alzheimer, Alzheimers-Disease, Analysis, Apolipoprotein E, Association, Bias, Citation, Citation Analysis, Dementia, Development, Diagnosis, Disease, E Genotype, Epsilon-4 Allele, Extraction, Graphical Test, ISI, Medline, Meta-Analysis, Onset, Polymorphism, Prevalence, Publication, Publication Bias, Ratio, Risk, Science, Web of Science

? Owolabi, M.O., Bower, J.H. and Ogunniyi, A. (2007), Mapping Africa’s way into prominence in the field of neurology. *Archives of Neurology*, **64**, 1696-1700.

Full Text: [2007\Arc Neu64, 1696.pdf](2007/Arc%20Neu64,%201696.pdf)

Abstract: Although neurology originated in Africa, there is little modern African contribution to the advancement of knowledge in this field. We present the African neurologic service and scientific productivity indices and suggest a development plan. We conducted PubMed and EMBASE searches for articles about neurologic services in Africa. To assess scientific productivity, we determined the number of publications of African origin in journals with high impact. The neurologist-population ratio in African countries varies from 1 per 162 885 persons to none in 11 countries, compared with 1 per 29 200 persons in the United States. There are few African publications in high-impact international journals of neurology. Africa faces a heavy burden of communicable diseases and increasing noncommunicable diseases, with few workers, poor equipment, and little research effort to bear it. There is a need for African neuro-scientists to discover areas of research unique to the continent in order to advance the frontiers of knowledge for all neurologists. International collaboration and support are required to improve the number of workers, resources, and research productivity.

Keywords: Bear, Collaboration, Development, Equipment, International, Journals, Knowledge, Neurology, Origin, Publications, Pubmed, Research, Research Productivity, Services, United States

? Campbell, P.G., Lee, Y.H., Bell, R.D., Maltenfort, M.G., Moshfeghi, D.M., Leng, T., Moshfeghi, A.A. and Ratliff, J.K. (2011), Medical school and residency influence on choice of an academic career and academic productivity among US neurology faculty. *Archives of Neurology*, **68** (8), 999-1004.

Full Text: [2011\Arc Neu68, 999.pdf](2011/Arc%20Neu68,%20999.pdf)

Abstract: Objective: To evaluate the effectiveness of medical schools and neurology training programs in the United States by determining their contribution to academic neurology in terms of how many graduates choose academic careers and their respective influence on current medical knowledge through bibliometric analysis. Design, Setting, and Participants: Biographical information from current faculty members of neurology training programs in the United States was obtained through an Internet-based search of departmental Web sites. Collected variables included medical school attended, residency program completed, and current academic rank. For each faculty member, ISI Web of Science and Scopus h-indices were also collected. Results: Data from academic neurologists from 120 training programs with 3249 faculty members were collected. All data regarding training program and medical school education were compiled and analyzed by the institution from which each individual graduated. The 20 medical schools and neurology residency training programs producing the greatest number of graduates remaining in academic practice and the mean h-indices are reported. More medical school graduates of the Columbia University College of Physicians and Surgeons chose to enter academic neurology practice than the graduates of any other institution. Analyzed by residency training program attended, New York Presbyterian Hospital (Columbia University), Mayo Clinic (Rochester, Minnesota), and Mount Sinai Medical Center (New York, New York) produced the most graduates remaining in academics. Conclusions: This retrospective, longitudinal cohort study examines through quantitative measures the academic productivity and rank of academic neurologists. The results demonstrate that several training programs excel in producing a significantly higher proportion of academically active neurologists.

Keywords: Academics, Bibliometric, Bibliometric Analysis, Contribution, Education, Google-Scholar, h-Index, h-Indices, Hospital, Information, Medical, Medical School, Predictors, Productivity, Program, Radiology, Rank, Residency, Schools, Science, Scopus, Training, University, US, Web of Science, Web-of-Science

# Title: Archives of Ophthalmology

Full Journal Title: [Archives of Ophthalmology](http://archopht.ama-assn.org/contents-by-date.0.dtl)

ISO Abbreviated Title: Arch. Ophthalmol.

JCR Abbreviated Title: Arch Ophthalmol-Chic

ISSN: 0003-9950

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Medical Assoc

Publisher Address: 515 N State St, Chicago, IL 60610

Subject Categories:

Ophthalmology: Impact Factor

? Albert, D.M. (1988), Analysis of the archives’ most frequently cited articles. *Archives of Ophthalmology*, **106** (4), 465-470.

Full Text: 1988\Arc Oph106, 465.pdf

? Foreman, J. (1993), Physicians not entirely responsible for rising health-care costs. *Archives of Ophthalmology*, **111** (6), 741.

? Levin, L.A., Gottlieb, J.L. and Albert, D.M. (2005), Evolution at the ARCHIVES. *Archives of Ophthalmology*, **123** (2), 263-264.

Full Text: [2005\Arc Oph123, 263.pdf](2005/Arc%20Oph123,%20263.pdf)

Keywords: Archives

? Ohba, N., Nakao, K., Isashiki, Y. and Ohba, A. (2007), The 100 most frequently cited articles in ophthalmology journals. *Archives of Ophthalmology*, **125** (7), 952-960.

Full Text: [2007\Arc Oph125, 952.pdf](2007/Arc%20Oph125,%20952.pdf)

Abstract: We screened 46 ophthalmology journals to identify the most frequently cited articles using the Science Citation Index Expanded (1975 to 2006). The 100 most-cited articles were published in 13 journals, most in the Archives of Ophthalmology (n=30), followed by Ophthalmology (n=27) and the American Journal of Ophthalmology (n=11), and originated from 10 countries, led by the United States (n=86). The topics covered by these classic articles included epidemiology of age-related macular degeneration and glaucoma, description of new diseases including cytomegalovirus retinitis, optical coherence tomography, hypotensive medications in glaucoma, laser photocoagulation to treat diabetic retinopathy and subfoveal choroidal neovascularization, photorefractive surgery, and vitrectomy to treat idiopathic macular hole. The most frequently cited articles provide a historical perspective in the scientific advancement of ophthalmology during the last 3 decades.

Keywords: Acquired Immunodeficiency Syndrome, Age-Related Maculopathy, Beaver-Dam Eye, Blue Mountains Eye, Immune-Deficiency Syndrome, Macular Degeneration, Open-Angle Glaucoma, Optical Coherence Tomography, Randomized Clinical-Trials, Subfoveal Choroidal Neovascularization

? Yeo, T.K. and Eong, K.G.A. (2008), The 100 most frequently cited articles in ophthalmology journals: Another perspective. *Archives of Ophthalmology*, **126** (6), 873-874.

Full Text: [2008\Arc Oph126, 873.pdf](2008/Arc%20Oph126,%20873.pdf)

? Obha, N. (2008), The 100 most frequently cited articles in ophthalmology journals: Another perspective - In reply. *Archives of Ophthalmology*, **126** (6), 874-875.

Full Text: 2008\Arc Oph126, 874.pdf

Keywords: Journals

? Akbari, M., Akbari, S. and Pasquale, L.R. (2009), The association of primary open-angle glaucoma with mortality a meta-analysis of observational studies. *Archives of Ophthalmology*, **127** (2), 204-210.

Abstract: Objective: To conduct a meta-analysis to estimate the relationship between primary open-angle glaucoma (POAG) and mortality. Methods: A systematic search of the PUBMED, EMBASE, and Web of Science databases yielded 9 cohort studies with relative risk (RR) estimates for all-cause mortality. The studies were critically reviewed by an expert in the field. The data were extracted and analyzed in a pooled analysis by the random-effects model. Meta-regression to assess for heterogeneity by several covariates and subgroup analysis on cardiovascular mortality were performed. Results: A significant risk was not detected in the final pooled analysis (RR, 1.13; 95% confidence interval [CI], 0.97-1.31) for all-cause mortality. A meta-regression across mean follow-up time, age, and sex was not significant. A meta-regression across diabetes status in 3 of the 9 studies did not demonstrate significant results (P = .94). Subgroup analysis on cardiovascular mortality from 4 of the 9 studies was marginally significant (RR, 1.20; 95% CI, 1.00-1.43; P = .05), but insignificant after removal of a study in which POAG was ascertained by self and proxy report (RR, 1.12; 95% CI, 0.87-1.46). Conclusion: This meta-analysis does not demonstrate an association between POAG and all-cause or cardiovascular mortality.

Keywords: All-Cause Mortality, Analysis, Angeles Latino Eye, Barbados Eye, Beaver Dam Eye, Blood-Pressure Indexes, Blue Mountains Eye, Cardiovascular, Cohort Studies, Coronary-Heart-Disease, Databases, Diabetes, Follow-up, Intraocular-Pressure, Meta Analysis, Meta-Analysis, Methods, Model, Mortality, Pooled Analysis, Primary, PUBMED, Relative Risk, Risk, Risk-Factors, Science, Systematic, Type-2 Diabetes-Mellitus, Web of Science

? Ohba, N. and Nakao, K. (2010), The 101 most frequently cited articles in ophthalmology journals from 1850 to 1949. *Archives of Ophthalmology*, **128** (12), 1610-1617.

Full Text: [2010\Arc Oph128, 1610.pdf](2010/Arc%20Oph128,%201610.pdf)

Abstract: We screened 32 ophthalmology journals that had published articles during the period from 1850 through 1949 to identify top-cited articles in the field of ophthalmology (hereafter referred to as citation classics) using the online database Science Citation Index Expanded (Thompson Reuters, Chicago, Illinois). The 101 most frequently cited articles were published in 16 journals. Archives of Ophthalmology had the most top-cited articles (n=31), followed by American Journal of Ophthalmology (n=24) and Albrecht von Graefe’s Archiv fur Ophthalmologie (n=9). These articles originated from 14 countries, with the United States publishing the majority (n=58). Most of the citation classics are clinical studies on topics such as rubella cataract, retinopathy of prematurity, keratoconjunctivitis sicca, sympathetic ophthalmia, and the first report of eponymous diseases (eg, Leber hereditary optic neuropathy, Duane retraction syndrome, and Stargardt disease). A considerable number of these articles were ignored initially and for several decades after publication, but, like the classic fairy tale Sleeping Beauty, they have been rediscovered. Our study provides a historical perspective on the classic papers in the literature that are still influential in ophthalmology. Arch Ophthalmol. 2010;128(12):1610-1617.

Keywords: Articles, Cataract, Citation, Citation Classics, Database, Field, Journals, Light, Literature, Of-The-Literature, Ophthalmology, Optic-Nerve, Primary Tumors, Publication, Publishing, Recklinghausens-Disease, Science, Science Citation Index, Science Citation Index Expanded

# Title: Archives of Oral Biology

Full Journal Title: Archives of Oral Biology

ISO Abbreviated Title: Arch. Oral Biol.

JCR Abbreviated Title: Arch Oral Biol

ISSN: 0003-9969

Issues/Year: 12

Journal Country/Territory: England

Language: English

Publisher: Pergamon-Elsevier Science Ltd

Publisher Address: The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, England

Subject Categories:

Dentistry, Oral Surgery & Medicine: Impact Factor

Huang, S., Nakagaki, H., Okumura, H., Hayashizaki, J., Negoro, M., Adachi, K., Tsuge, S., Ando, S., Robinson, C., Pearce, E., Huang, A. and Nguyen, T.T. (1997), Fluoride profiles in dental calculus from Japanese, Chinese and British residents. *Archives of Oral Biology*, **42** (10-11), 665-671.

Abstract: Whether the fluoride concentrations and profiles differ in human dental calculus obtained from different countries was investigated. A total of 203 dental calculus deposits on 203 permanent teeth from residents (mean age, 52.1 years) of Nagoya (Japan), Shanghai (China), Leeds (Great Britain) and the Wuhan mountainous area (China, fluoridated area) were analysed. An abrasive microsampling procedure was used to examine fluoride distribution. There were five types of fluoride profiles in dental calculus in each area/country (designated types L, J, U, T, W). In supragingival calculus, type L (highest in the outermost layers) and type J (highest in the innermost layers) both had significantly higher values than type U (high in the surface and innermost layers) but were relatively identical. In subgingival calculus, type W (high in the outermost, mid and innermost layers) was characteristics. Calculus from the Wuhan mountainous area (fluoridated) had the highest fluoride concentration, followed by Leeds (non-fluoridated), and Nagoya and Shanghai (non-fluoridated) calculus had the lowest. Fluoride concentrations in supragingival calculus were higher in teeth extracted because of periodontal diseases than dental caries. It is concluded that fluoride concentrations and distribution in dental calculus differ from country to country, probably due to different fluoride environments.

Huang, A., Nakagaki, H., Tsuboi, S., Ji, H., Ohno, N., Chen, R., Nguyen, T.T. and Kim, J.B. (1998), Fluoride profiles of perikymata in enamel surfaces of human premolars. *Archives of Oral Biology*, **43** (9), 669-677.

Abstract: Twenty-five premolars (from Nagoya, Japan < 0.1 parts/10-6F in drinking water) were sampled to determine the fluoride content in imbrication lines of Retzius between the grooves and ridges of perikymata on the enamel surface. Eight small windows were formed on each surface in groove and ridge regions using an etched microsampling technique. By using a regression curve, y = ax (-b), fluoride concentrations were compared at depths of 1, 3, 5, 10, 20, 30 and 50 microm in the perikymata regions. Fluoride concentrations increased gradually from the age of 10 to 12 years on the premolar surfaces, but were significantly higher in 12-year-olds or older (erupted teeth) than in 10-year-olds or younger (unerupted teeth). No obvious difference in fluoride concentrations was found between males and females. In the outermost enamel (< 5 microm depth), fluoride concentrations were significantly higher in the grooves than the ridges of the perikymata. Comparison of the exponential regression coefficients (-b) of the fluoride profiles showed a significant difference between the grooves and ridges. It was concluded that fluoride concentrations and profiles were higher in grooves than in ridges of perikymata, probably because they are naturally porous and are stagnation areas attracting dental plaque.

# Title: Archives of Orthopaedic and Trauma Surgery

Full Journal Title: [Archives of Orthopaedic and Trauma Surgery](http://www.springerlink.com/content/101491/?p=95830298c454411fadcbfd0f0e311865&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Schoffel, N., Spallek, M., Scutaru, C., Mache, S., Groneberg, D.A., Quarcoo, D. and Vitzthum, K. (2010), Arthroplasty: Critical scientometric analysis of current benchmarking and evaluation procedures. *Archives of Orthopaedic and Trauma Surgery*, **130** (2), 293-296.

Full Text: [2010\Arc Ort Tra Sur130, 293.pdf](2010/Arc%20Ort%20Tra%20Sur130,%20293.pdf)

Keywords: Evaluation, Impact Factor

# Title: Archives of Otolaryngology-Head & Neck Surgery

Full Journal Title: Archives of Otolaryngology-Head & Neck Surgery

ISO Abbreviated Title: Arch. Otolaryngol. Head Neck Surg.

JCR Abbreviated Title: Arch Otolaryngol

ISSN: 0886-4470

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Medical Assoc

Publisher Address: 515 N State St, Chicago, IL 60610

Subject Categories:

Otorhinolaryngology Surgery: Impact Factor

? Madasu, R., Ruckenstein, M.J., Leake, F., Steere, E. and Robbins, K.T. (1997), Ototoxic effects of supradose cisplatin with sodium thiosulfate neutralization in patients with head and neck cancer. *Archives of Otolaryngology-Head & Neck Surgery*, **123** (9), 978-981.

Abstract: Objective: To assess the incidence and magnitude of ototoxicity in patients undergoing an experimental targeted chemoradiation protocol incorporating extremely high-dose intra-arterial cisplatin therapy with systemic sodium thiosulfate neutralization for the treatment of advanced carcinomas of the head and neck. Design: inception cohort study. Setting: University-based, tertiary care referral center for advanced head and neck malignant disease. Patients: The first 70 patients with advanced carcinomas of the head and neck consecutively entered in the protocol. Intervention: Patients received up to 4 weekly courses of intra-arterial cisplatin (150 mg/m (2) per infusion), together with systemic sodium thiosulfate and external beam radiation (68-70 Gy). Audiometric analysis was performed before the initiation of therapy, and subsequent to the second and fourth cisplatin infusions. Main Outcome Measures: Audiometric thresholds. Ototoxicity was defined as an increase in pure-tone threshold of 15 dB at 1 frequency or 10 dB at 3 frequencies, between 250 and 4000 Hz. Results: The incidence of ototoxicity was 25% at 150 mg/m (2), 50% at 300 mg/m (2), 64% at 450 mg/m (2), and 60% at 600 mg/m2. Hearing at frequencies of 2000 Hz or less was minimally or not affected. Previous hearing loss did not appear to affect the incidence of ototoxicity. A plateau of hearing loss at 60-dB hearing level, as noted by other authors, was not observed. There were no cases of debilitating tinnitus or of vestibular loss. Conclusions: Ototoxicity did occur but was largely confined to the higher frequencies. Hearing losses resulting from this chemoradiation protocol were not sufficiently severe to alter its application.

Keywords: High-Dose Cisplatin, Hearing-Loss, Induction Chemotherapy, Function Preservation, Guinea-Pigs, Radiation, Laryngeal, Carcinoma, Protocol, Children

# Title: Archives of Pediatrics

Full Journal Title: Archives of Pediatrics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Strong, R.A. (1920), Meningitis, caused by lead poisoning, in a child of nineteen months. *Archives of Pediatrics*, **37**, 532-537.

# Title: Archives of Pediatrics & Adolescent Medicine

Full Journal Title: [Archives of Pediatrics & Adolescent Medicine](http://archpedi.ama-assn.org/contents-by-date.0.dtl)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Liem, E.T., Sauer, P.J.J., Oldehinkel, A.J. and Stolk, R.P. (2008), Association between depressive symptoms in childhood and adolescence and overweight in later life. *Archives of Pediatrics & Adolescent Medicine*, **162** (10), 981-988.

Abstract: Objective: To present an overview of the association between depressive symptoms in childhood and adolescence and subsequent overweight in later life. Data Sources: MEDLINE, EMBASE, and Web of Science for all indexed journals from January 1, 1997, to May 30, 2007. Study Selection: Abstracts of 513 articles were reviewed manually. Studies were excluded if unrelated to depressive symptoms and overweight (n = 460), if they were conducted in an adult population (n = 10) or in a population of all age groups (n = 2), or if they were performed in clinic-based populations of overweight participants. In total, 32 articles were reviewed including 21 cross-sectional and 11 longitudinal reports. Main Exposure: Depressive symptoms in childhood and adolescence. Main Outcome Measure: Overweight. Results: Four cross-sectional studies that satisfied our quality criteria revealed an association between depressive symptoms and overweight in girls aged 8 to 15 years, reporting different effect sizes including a correlation coefficient of 0.14 and a regression coefficient of 0.27. Four longitudinal studies in accord with our quality criteria suggest that depressive symptoms in childhood or adolescence are associated with a 1.90- to 3.50-fold increased risk of subsequent overweight (95% confidence intervals varying from 1.02 to 5.80, respectively). Conclusion: These results support a positive association between depressive symptoms at age 6 to 19 years and overweight in later life, assessed after a period of 1 to 15 years.

Keywords: Adult, Adult Obesity, Aged, Atypical Depression, Body-Mass Index, Children, Confidence Intervals, EMBASE, Girls, Journals, Longitudinal Studies, Medline, Mental-Health, Overview, Overweight, Population, Prevalence, Risk, Risk-Factors, Science, Sources, Symptoms, Web of Science, Weight Perception

? Tripodi, S.J., Bender, K., Litschge, C. and Vaughn, M.G. (2010), Interventions for reducing adolescent alcohol abuse: A meta-analytic review. *Archives of Pediatrics & Adolescent Medicine*, **164** (1), 85-91.

Full Text: [2010\Arc Ped Ado Med164, 85.pdf](2010/Arc%20Ped%20Ado%20Med164,%2085.pdf)

Abstract: Objective: To assess the effectiveness of substance abuse interventions for their ability to reduce adolescent alcohol use. Data Sources: MEDLINE; PsycINFO; ERIC; Wilson Social Science Abstracts; Criminal Justice Abstracts; Social Work Abstracts; Social Science Citation Index; Dissertations Abstracts International; National Criminal Justice Research Service; Social, Psychological, Criminological, Educational Trials Register; and the PsiTri databases from 1960 through 2008. Study Selection: of 64 titles and abstracts identified, 16 studies and 26 outcomes constituted the sample. The researchers calculated Hedges g effect sizes and used a random-effects model to calculate adjusted pooled effect sizes. Heterogeneity was explored using stratified analyses. Main Exposure: Completion of a substance abuse intervention that aimed to reduce or eliminate alcohol consumption. Main Outcome Measures: Abstinence, frequency of alcohol use, and quantity of alcohol use measured between 1 month and 1 year upon completion of treatment. Results: Pooled effects of standardized mean differences indicate that interventions significantly reduce adolescent alcohol use (Hedges g=-0.61; 95% confidence interval [CI], -0.83 to -0.40). Stratified analyses revealed larger effects for individual treatment (Hedges g=-0.75; 95% CI, -1.05 to -0.40) compared with family- based treatments (Hedges g=-0.46; 95% CI, -0.66 to -0.26). Conclusions: Treatments for adolescent substance abuse appear to be effective in reducing alcohol use. Individual-only interventions had larger effect sizes than family-based interventions and effect sizes decreased as length of follow-up increased. Furthermore, behavior-oriented treatments demonstrated promise in attaining long-term effects.

Keywords: Assertive Continuing Care, Behavior-Therapy, Citation, Consumption, Databases, Drug-Abuse, Efficacy, International, Medline, Metaanalysis, Model, Multidimensional Family-Therapy, Psychiatric Comorbidity, Psychotherapies, Research, Researchers, Residential-Treatment, Review, Science, Science Citation Index, Social Science Citation Index, Sources, Substance Use Disorders, Treatment

? Meerpohl, J.J., Wolff, R.F., Niemeyer, C.M., Antes, G. and von Elm, E. (2010), Editorial policies of pediatric journals survey of instructions for authors. *Archives of Pediatrics & Adolescent Medicine*, **164** (3), 268-272.

Full Text: [2010\Arc Ped Ado Med164, 268.pdf](2010/Arc%20Ped%20Ado%20Med164,%20268.pdf)

Abstract: Objective: To study whether specific recommendations aiming to improve publication practice were included in author instructions of pediatric journals. Design: We identified 69 journals in the subject category “pediatrics” of the Journal Citation Report 2007 that publish original research articles. From the journals’ on-line author instructions, we extracted information regarding endorsement of the Uniform Requirements for Manuscripts (URM) of the International Committee of Medical Journal Editors and of 5 major reporting guidelines such as the Consolidated Standards of Reporting Trials (CONSORT) statement, disclosure of conflicts of interest, and trial registration. Two investigators collected data independently. Results: The URM were mentioned in author instructions of 38 of the 69 journals (55%). Endorsement of reporting guidelines was low: CONSORT was referred to most frequently (14 journals; 20%); each of the other 4 reporting guidelines was mentioned in less than 10% of author instructions. Fifty-four journals (78%) explicitly required authors to disclose conflicts of interest, and 16 (23%) either recommended or required trial registration. The odds of endorsing the URM increased by 2.25 (95% confidence interval [CI], 1.17-4.34) per additional impact factor point. Similarly, the odds increased by 2.32 (95% CI, 0.95-5.70) for requiring disclosure of conflicts of interest and by 3.66 (95% CI, 1.74-7.71) for requiring trial registration. Conclusions: Many pediatric journals do not include recommendations that aim to improve publication practice in their author instructions. About one-fifth of journals do not require authors to disclose conflicts of interest on manuscript submission and more than three-quarters do not require/recommend trial registration.

Keywords: Authors, Biomedical-Research, Citation, Clinical-Trials, Consort Statement, Dec-Net, European Register, Germany, Impact, Impact Factor, Information, Journal, Journals, Publication, Quality, Randomized Controlled-Trials, Registration, Research, Transparency

? Ciampa, P.J., Kumar, D., Barkin, S.L., Sanders, L.M., Yin, H.S., Perrin, E.M. and Rothman, R.L. (2010), Interventions aimed at decreasing obesity in children younger than 2 years: A systematic review. *Archives of Pediatrics & Adolescent Medicine*, **164** (12), 1098-1104.

Abstract: Objective: To assess the evidence for interventions designed to prevent or reduce overweight and obesity in children younger than 2 years. Data Sources: MEDLINE, the Cochrane Central Register of Controlled Trials, CINAHL, Web of Science, and references from relevant articles. Study Selection: Included were published studies that evaluated an intervention designed to prevent or reduce overweight or obesity in children younger than 2 years. Data Extraction: Extracted from eligible studies were measured outcomes, including changes in child weight status, dietary intake, and physical activity and parental attitudes and knowledge about nutrition. Studies were assessed for scientific quality using standard criteria, with an assigned quality score ranging from 0.00 to 2.00 (0.00-0.99 is poor, 1.00-1.49 is fair, and 1.50-2.00 is good). Data Synthesis: We retrieved 1557 citations; 38 articles were reviewed, and 12 articles representing 10 studies met study inclusion criteria. Eight studies used educational interventions to promote dietary behaviors, and 2 studies used a combination of nutrition education and physical activity. Study settings included home (n=2), clinic (n=3), classroom (n=4), or a combination (n=1). Intervention durations were generally less than 6 months and had modest success in affecting measures, such as dietary intake and parental attitudes and knowledge about nutrition. No intervention improved child weight status. Studies were of poor or fair quality (median quality score, 0.86; range, 0.28-1.43). Conclusions: Few published studies attempted to intervene among children younger than 2 years to prevent or reduce obesity. Limited evidence suggests that interventions may improve dietary intake and parental attitudes and knowledge about nutrition for children in this age group. For clinically important and sustainable effect, future research should focus on designing rigorous interventions that target young children and their families.

Keywords: Anticipatory Guidance, Body-Mass Index, Child, Childhood Overweight, Children, Citations, Cochrane, Education, Extraction, Families, Infant Weight-Gain, Intervention, Interventions, Knowledge, Low-Income Families, Medline, Nutrition, Obesity, Outcomes, Overweight, Parental Attitudes, Physical Activity, Physical-Activity, Project, Rapid Growth, Research, Review, Risk, Saturated Fat, Science, Sources, Success, Systematic, Systematic Review, Web of Science

? Cohen, E., Jovcevska, V., Kuo, D.Z. and Mahant, S. (2011), Hospital-based comprehensive care programs for children with special health care needs: A systematic review. *Archives of Pediatrics & Adolescent Medicine*, **165** (6), 554-561.

Abstract: Objective: To examine the effectiveness of hospital-based comprehensive care programs in improving the quality of care for children with special health care needs. Data Sources: A systematic review was conducted using Ovid MEDLINE, CINAHL, EMBASE, PsycINFO, Sociological Abstracts SocioFile, and Web of Science. Study Selection: Evaluations of comprehensive care programs for categorical (those with single disease) and noncategorical groups of children with special health care needs were included. Selected articles were reviewed independently by 2 raters. Data Extraction: Models of care focused on comprehensive care based at least partially in a hospital setting. The main outcome measures were the proportions of studies demonstrating improvement in the Institute of Medicine’s quality-of-care domains (effectiveness of care, efficiency of care, patient or family centeredness, patient safety, timeliness of care, and equity of care). Data Synthesis: Thirty-three unique programs were included, 13 (39%) of which were randomized controlled trials. Improved outcomes most commonly reported were efficiency of care (64% [49 of 76 outcomes]), effectiveness of care (60% [57 of 95 outcomes]), and patient or family centeredness (53% [10 of 19 outcomes). Outcomes less commonly evaluated were patient safety (9% [3 of 33 programs]), timeliness of care (6% [2 of 33 programs]), and equity of care (0%). Randomized controlled trials occurred more frequently in studies evaluating categorical vs noncategorical disease populations (11 of 17 [65%] vs 2 of 16 [17%], P=.008). Conclusions: Although positive, the evidence supporting comprehensive hospital-based programs for children with special health care needs is restricted primarily to nonexperimental studies of children with categorical diseases and is limited by inadequate outcome measures. Additional high-quality evidence with appropriate comparative groups and broad outcomes is necessary to justify continued development and growth of programs for broad groups of children with special health care needs.

Keywords: Birth-Weight Infants, Care, Children, Chronic Illness, Complex, Controlled-Trial, Development, Disease, Effectiveness, EMBASE, Extraction, Follow-up, Health, Health Care, Hospital, Intervention, Management, Medical Home, Medline, Outcome, Outcomes, Pediatric Home Care, Quality of Care, Randomized Controlled Trials, Randomized Trial, Review, Safety, Science, Sources, Systematic, Systematic Review, Web of Science

# Title: Archives of Physical Medicine and Rehabilitation

Full Journal Title: [Archives of Physical Medicine and Rehabilitation](http://www.archives-pmr.org/); [Archives of Physical Medicine and Rehabilitation](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6702&_auth=y&_acct=C000024058&_version=1&_urlVersion=0&_userid=4191814&md5=6027d0b738ded5735b0497fef1b09b62)

ISO Abbreviated Title: Arch. Phys. Med. Rehabil.

JCR Abbreviated Title: Arch Phys Med Rehab

ISSN: 0003-9993

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: W B Saunders Co

Publisher Address: Independence Square West Curtis Center, Ste 300, Philadelphia, PA 19106-3399

Subject Categories:

Rehabilitation: Impact Factor 1.371, 1/ (2001)

Sport Sciences: Impact Factor 1.371, 10/ (2001)

? Key, J.D. and Roland C.G. (1977), References accuracy in articles accepted for publication in the *Archives of Physical Medicine and Rehabilitation*. *Archives of Physical Medicine and Rehabilitation*, **58** (??), 136-137.

? Key, J.D. (1988), Citation classics - Most-cited articles from *Archives of PM-and-R*. *Archives of Physical Medicine and Rehabilitation*, **69** (12), 1058-1059.

Full Text: 1988\Arc Phy Med Reh69, 1058.pdf

Keywords: Articles, Citation

Kuhlemeier, K.V. (1992), A bibliometric analysis of the *Archives of Physical Medicine and Rehabilitation*. *Archives of Physical Medicine and Rehabilitation*, **73** (2), 126-132.

Abstract: A bibliometric analysis based on the Journal Citation Reports distributed by the Institute of Scientific Information was made of the Archives of Physical Medicine and Rehabilitation and related journals to determine the relative ranking of the Archives in several bibliometric categories. It was hoped that this process would yield objective evidence for the strengths and weaknesses of the Archives. Bibliometric indices that were compared included the impact factor (a reflection of how often a journal’s articles are cited) and the cited half-life and immediacy (both of which deal with the timeliness of a journal’s articles). The overall rankings of the Archives in 1988 compared to all journals indexed were 1,887 of 4,020 for impact factor, 2,633 of 2,683 for cited half-life and 1,793 of 4,020 for immediacy. In general, the Archives ranked higher in most of these indices than most rehabilitation journals but lower than other journals widely cited in the Archives, including general journals, other specialty journals, and a basic science journal.

Keywords: Bibliography, Descriptive, Bibliography of Medicine, Periodicals, Publishing, Citation Analysis, Tool

? Terreni, M., Benfenati, E., Pistotti, V. and Fanelli, R. (1995), A library report on the analysis of pesticides subject to investigation for the European-Communities-Commission. *Archives of Physical Medicine and Rehabilitation*, **58** (1-4), 31-42.

Full Text: Arc Phy Med Reh58, 31

Abstract: A recent Report from the Commission of the European Communities indicated a list of eleven Pesticides (benazolin, bromofenoxim, ethofumesate, fenamiphos, maneb, metham-sodium, oxydemetonmethyl, phenmedipham, trichlorfon, trichloroacetic acid, ziram) to be studied on an analytical point of view because of their widespread use in Europe, but which lack of suitable analytical procedures for water samples at the required limit of detection (0.1 μg/l). The present study presents the results of a library search, and indicates the principal procedures presented in the literature for these pesticides. Useful techniques appeared for some compounds, but for others more studies are still needed.

Keywords: Pesticides, Library Search, GC, HPLC, Mass Spectrometry, Water, Performance Liquid-Chromatography, Organo-Phosphorus Pesticides, Postcolumn Reaction Detection, Accommodate Megabore Columns, Capillary Gas-Chromatography, Flame Photometric Detection, Plasma Emission Detection, Mass-Spectrometry, Mobile-Phase, Environmental-Samples

? Kuhlemeier, K.V. (1992), A bibliometric analysis of the *Archives of Physical Medicine and Rehabilitation*. *Archives of Physical Medicine and Rehabilitation*, **73** (2), 126-132.

Full Text: 1992\Arc Phy Med Reh73, 126.pdf

Abstract: A bibliometric analysis based on the Journal Citation Reports distributed by the Institute of Scientific Information was made of the Archives of Physical Medicine and Rehabilitation and related journals to determine the relative ranking of the Archives in several bibliometric categories. It was hoped that this process would yield objective evidence for the strengths and weaknesses of the Archives. Bibliometric indices that were compared included the impact factor (a reflection of how often a journal’s articles are cited) and the cited half-life and immediacy (both of which deal with the timeliness of a journal’s articles). The overall rankings of the Archives in 1988 compared to all journals indexed were 1,887 of 4,020 for impact factor, 2,633 of 2,683 for cited half-life and 1,793 of 4,020 for immediacy. In general, the Archives ranked higher in most of these indices than most rehabilitation journals but lower than other journals widely cited in the Archives, including general journals, other specialty journals, and a basic science journal.

Keywords: Bibliography, Descriptive, Bibliography of Medicine, Periodicals, Publishing, Citation Analysis, Tool

Minozzi, S., Pistotti, V. and Forni, M. (2000), Searching for rehabilitation articles on MEDLINE and EMBASE. An example with cross-over design. *Archives of Physical Medicine and Rehabilitation*, **81** (6), 720-722.

Full Text: [2000\Arc Phy Med Reh81, 720.pdf](2000/Arc%20Phy%20Med%20Reh81,%20720.pdf)

Abstract: Objective: To analyze the usefulness of MEDLINE and EMBASE biomedical databases in rehabilitation and to identify descriptors and text words necessary to do a comprehensive search.

Methods: We looked for articles published since 1990 relating to neurologic, orthopedic, respiratory, urologic, and rheumatologic rehabilitation. We looked for all descriptors and text words pertinent to rehabilitation and linked them with “cross-over.”)

Results: We found 165 articles in MEDLINE and 159 in EMBASE with an overlap of only 17% of articles. Only 32% of the articles in MEDLINE and 35% in EMBASE were relevant. of the 214 nonoverlapping articles, 84% were published in journals present in both databases, but were indexed differently.

Conclusion: At least two databases must be used to ensure a comprehensive literature search. Searching in EMBASE after MEDLINE we gained 25 articles (32%). Bibliographic search in rehabilitation is particularly complex because of the heterogeneity of the subject matter. Cooperation between an information professional and a clinician is essential to ensure a comprehensive search.

Keywords: Rehabilitation, Cross-Over Studies, Medline, Embase, Databases, Bibliographic

? de Groot, M.H., Phillips, S.J. and Eskes, G.A. (2003), Fatigue associated with stroke and other neurologic conditions: Implications for stroke rehabilitation. *Archives of Physical Medicine and Rehabilitation*, **84** (11), 1714-1720.

Full Text: [2003\Arc Phy Med Reh84, 1714.pdf](2003/Arc%20Phy%20Med%20Reh84,%201714.pdf)

Abstract: Objectives: To examine the general phenomenon of fatigue in stroke and other neurologic disorders and to review what is currently known about its occurrence, including its frequency, duration, severity, and associated factors, to develop a strategy for treatment.

Data Sources: Computerized databases (eg, PubMed, PsycInfo, Science Citation Index, Ovid EMBASE, Ovid MEDLINE) searched from inception to May 2002. Additional references were identified from bibliographies of pertinent articles and books.

Study Selection: Over 1000 articles were identified as relevant to fatigue experienced by patients with neurologic or nonneurologic disorders. Articles on fatigue in stroke and neurologic disorders, mechanisms, and/or treatment were selected for inclusion.

Data Extraction: Authors reviewed the articles and assessed the purpose, study design, and conclusions for validity and relevance to the topic of fatigue in stroke.

Data Synthesis: Fatigue is a common complaint among patients with neurologic disorders including stroke. Few studies have documented the high frequency of fatigue in poststroke patients and its negative impact on daily functioning and quality of life. Little is known about associated factors or about therapeutic strategies that may be used to alleviate it. Examination of fatigue in other neurologic populations suggests common characteristics and associated factors that may be useful in the development of potential therapeutic strategies. Pharmacologic and nonpharmacologic therapeutic interventions, such as stimulants, amantadine, or sleep and stress-management education, have been used with some success in neurologic and other patient populations (eg, multiple sclerosis, human immunodeficiency virus, acquired immune deficiency syndrome, cancer), but evidence of effectiveness based on randomized clinical trials is rare.

Conclusions: Poststroke fatigue is common. Therapeutic strategies have been used to treat fatigue in other patient populations, but it is unclear whether these will be beneficial to poststroke patients. Frequency, severity, duration, impact, predisposing factors, and causes of poststroke fatigue, as well as the development of effective treatment, require further research. Criteria for assessment of fatigue and potential therapeutic interventions are outlined as a first step for stimulating further research.

Keywords: Cerebrovascular Disorders, Fatigue, Neurologic Disorders, Quality of Life, Recovery of Function, Rehabilitation, Review [Publication Type], Cancer-Related Fatigue, Multiple-Sclerosis, Parkinsons-Disease, Brain-Injury, Head-Injury, Subarachnoid Hemorrhage, Poststroke Depression, Breathing Disorders, Follow-up, Symptoms

? Wayne, P.M., Krebs, D.E., Wolf, S.L., Gill-Body, K.M., Scarborough, D.M., McGibbon, C.A., Kaptchuk, T.J. and Parker, S.W. (2004), Can Tai Chi improve vestibulopathic postural control? *Archives of Physical Medicine and Rehabilitation*, **85** (1), 142-152.

Full Text: [2004\Arc Phy Med Reh85, 142.pdf](2004/Arc%20Phy%20Med%20Reh85,%20142.pdf)

Abstract: Wayne PM, Krebs DE, Wolf SL, Gill-Body KM, Scarborough DM, McGibbon CA, Kaptchuk TJ, Parker SW. Can Tai Chi improve vestibulopathic postural control? Arch Phys Med Rehabil 2004;85:142-52.

Objectives: To evaluate the rationale and scientific support for Tai Chi as an intervention for vestibulopathy and to offer recommendations for future studies.

Data Sources: A computer-aided search, including MEDLINE and Science Citation Index, to identify original Tai Chi studies published in English; relevant references cited in the retrieved articles were also included.

Study Selection: A preliminary screening selected all randomized controlled trials (RCTs), non-RCTs, case-control studies, and case series that included Tai Chi as an intervention and had at least 1 outcome variable relevant to postural stability.

Data Extraction: Authors critically reviewed studies and summarized study designs and outcomes in a summary table.

Data Synthesis: Twenty-four Tai Chi studies met screening criteria. No studies specifically studying Tai Chi for vestibulopathy were found. Collectively, the 24 studies provide sometimes contradictory but generally supportive evidence that Tai Chi may have beneficial effects for balance and postural impairments, especially those associated with aging. Ten RCTs were found, of which 8 provide support that Tai Chi practiced alone, or in combination with other therapies, can reduce risk of falls, and/or impact factors associated with postural control, including improved balance and dynamic stability, increased musculoskeletal strength and flexibility, improved performance of activities of daily living (ADLs), reduced fear of falling, and general improvement in psychologic well-being. Studies using other designs support the results observed in RCTs.

Conclusions: At present, few data exist to support the contention that Tai Chi specifically targets the impairments, functional limitations, disability, and quality of life associated with peripheral vestibulopathy. There are, however, compelling reasons to further investigate Tai Chi for vestibulopathy, in part because Tai Chi appears useful for a variety of nonvestibulopathy etiologic balance disorders, and is safe. Especially needed are studies that integrate measures of balance relevant to ADLs with other psychologic and cognitive measures; these might help identify specific mechanisms whereby Tai Chi can remedy balance disorders.

Keywords: Balance, Posture, Rehabilitation, Tai Chi, Quality-Of-Life, Older Adults, Cardiorespiratory Function, Aerobic Exercise, Vestibular Rehabilitation, Rheumatoid-Arthritis, Alternative Medicine, Chuan Practitioners, Acoustic Neuroma, Physical Therapy

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Full Text: [2004\Arc Phy Med Reh85, 1561.pdf](2004/Arc%20Phy%20Med%20Reh85,%201561.pdf)

? Bateni, H. and Maki, B.E. (2005), Assistive devices for balance and mobility: Benefits, demands, and adverse consequences. *Archives of Physical Medicine and Rehabilitation*, **86** (1), 134-145.

Full Text: [2005\Arc Phy Med Reh86, 134.pdf](2005/Arc%20Phy%20Med%20Reh86,%20134.pdf)

Abstract: Objectives: To provide information on the advantages and possible disadvantages of using canes and walkers. Data Sources: English-language articles were identified by searching MEDLINE and PUBMED (1966-May 2003) for key words cane or walker, excluding articles unrelated to mobility aids. Bibliographies were reviewed and ISI Web of Science citation searches were run to identify additional references. Over 1000 articles were selected for further evaluation. Study Selection: We extracted all Studies of single-tip canes or pickup walkers addressing: (1) functional, biomechanic, or neuromotor benefits; (2) biomechanic, attentional, neuromotor, metabolic, or physiologic demands; and (3) falls, injuries, or other problems. We included approximately 10% of the articles originally identified. Data Extraction: The methodology of each selected article, and findings relevant to the benefits, demands, or adverse effects of cane or walker use were summarized. Data Synthesis: Findings were synthesized by considering their relation to basic biomechanic principles. Some biomechanic findings appear to support the clinical view that canes and walkers can improve balance and mobility for older adults and people with other clinical conditions. However, a large proportion of users experience difficulties, and the use of such devices is associated with increased risk of falling. A small number of studies have characterized some of the specific demands and problems associated with using mobility aids. Conclusions: Clinical and biomechanic evaluations of canes and walkers confirm that these devices can improve balance and mobility. However, they can also interfere with one’s ability to maintain balance in certain situations, and the strength and metabolic demands can be excessive. More research is needed to identify and solve specific problems. Such research may lead to improved designs and guidelines for safer use of canes and walkers.

Keywords: Accidental Falls, Adults, Adverse Effects, Aging, Anticipatory Postural Adjustments, Assistive Devices, Balance, Bibliographies, Canes, Carpal-Tunnel Syndrome, Citation, Evaluation, Extraction, Fall Prevention, Falls, Functional, Gait, Guidelines, Information, ISI, Lead, Medline, Methodology, Muscle-Activity, Nonweight-Bearing Ambulation, Older Adults, Posture, PUBMED, Rehabilitation, Research, Risk, Science, Sources, Spinal-Cord-Injury, Standing Balance, Stroke Patients, Voluntary Movement, Walkers, Web of Science, Weight-Bearing

? Stolwijk-Swüste, J.M., Beelen, A., Lankhorst, G.J. and Nollet, F. (2005), The course of functional status and muscle strength in patients with late-onset sequelae of poliomyelitis: A systematic review. *Archives of Physical Medicine and Rehabilitation*, **86** (8), 1693-1701.

Full Text: [2005\Arc Phy Med Reh86, 1693.pdf](2005/Arc%20Phy%20Med%20Reh86,%201693.pdf)

Abstract: Stolwijk-SwUste JM, Beelen A, Lankhorst GJ, Nollet F, for the CARPA Study Group. The course of functional status and muscle strength in patients with late-onset sequelae of poliomyelitis: a systematic review. Arch Phys Med Rehabil 2005;86:1693-701. Objectives: To review systematically studies of late-onset polio sequelae on the course of functional status and muscle strength over time and to identify prognostic factors of change. Data Sources: We conducted a computerized literature search up to July 2004 in MEDLINE, EMBASE, CINAHL, Web of Science, PsychInfo, and the Cochrane controlled trial register using the key words: postpolio, postpoliomyelitis, postpoliomyelitis syndrome, post poliomyelitis muscular atrophy, and poliomyelitis. Study Selection: Reports were selected by I reviewer if the study involved subjects with a history of poliomyelitis, the outcome measures described functional status or muscle strength, and follow-up was for at least 6 months. Data Extraction: Studies were summarized with regard to population, design, sample size, outcome measures, results, and methodologic scores. Overlap in populations between studies was checked. Data Synthesis: of 71 potentially relevant studies, 19 were included (2 on functional status, 15 on muscle strength, 2 on both muscle strength and functional status). Two studies on the course of functional status had sufficient quality and reported inconsistent results. Four studies on the course of muscle strength had sufficient quality. Two studies reported a decline in strength and 2 reported no change. Decline in strength was only reported in studies with a follow-up period longer than 2 years. One study reported extent of paresis as a prognostic factor for change in perceived physical mobility. Conclusions: Conclusions cannot be drawn from the literature with regard to the functional course or prognostic factors in late-onset polio sequelae. The rate of decline in muscle strength is slow, and prognostic factors have not yet been identified. Long-term follow-up studies with unselected study populations and age-matched controls are needed, with specific focus on prognostic factors.(c) 2005 by the American Congress of Rehabilitation Medicine and the American Academy of Physical Medicine and Rehabilitation.

Keywords: 4-Year Follow-up, Assessments, Cochrane, Cohort, EMBASE, Extraction, Follow-up, Functional, History, Literature, Medline, Motor Units, Neuromuscular Function, Outcome, Polio Survivors, Postpolio Syndrome, Postpoliomyelitis Syndrome, Progression, Rehabilitation, Review, Review Literature, Science, Sources, Symptoms, Systematic, Systematic Review, Web of Science

? Kelly, C., Foxe, J.J. and Garavan, H. (2006), Patterns of normal human brain plasticity after practice and their implications for neurorehabilitation. *Archives of Physical Medicine and Rehabilitation*, **87** (12S), 20-29.

Full Text: [2006\Arc Phy Med Reh87, 20.pdf](2006/Arc%20Phy%20Med%20Reh87,%2020.pdf)

Abstract: Objectives: To illustrate how our knowledge about normal patterns of experience-induced plasticity can provide insights into the mechanisms of neurorehabilitation; to provide an overview of the practice-effects literature in order to simplify and amalgamate a large number of heterogeneous findings and identify typical patterns of practice effects and their determining factors; and to concentrate on the impact of practice on higher cognitive functions, such as working memory, and present some preliminary but promising behavioral data that show how practice on a complex cognitive task can benefit cognitive functioning more generally. Data Sources: We performed a systematic search for peer-reviewed journal articles using computerized databases (PUBMED, ISI Web of Science, PsycINFO). Data Selection: Neuroimaging studies using functional magnetic resonance imaging (fMRI) or positron-emission tomography (PET) to examine functional activation changes as a result of practice on sensory, motor, or cognitive tasks in normal (healthy) populations were included in the review. Further studies were identified that examined the effects of rehabilitative training on functional activations in clinical populations using fMRI or PET. Data Extraction: Important characteristics of the selected studies were summarized in a systematic manner so to enable the extraction of specific factors impacting on the pattern of practice effects observed. Data Synthesis: We identified a number of factors that impact on the patterns of practice effects observed and discuss how the insights gained from the study of healthy populations can by applied to rehabilitation of cognitive deficits in clinical populations. Conclusions: Progress in our understanding of neurorehabilitative plasticity will be enabled by neuroimaging examinations of cognitive rehabilitation training grounded in a knowledge of normal (healthy) patterns of brain activation and practice-induced plasticity.

Keywords: Attention-Deficit, Hyperactivity Disorder, Brain, Conditional Oculomotor Associations, Databases, Extraction, FMRI, Functional, Functional Magnetic Resonance Imaging, Functional MRI, General Fluid Intelligence, Human, Imaging, Impact, ISI, Journal, Knowledge, Literature, Magnetic Resonance Imaging, Memory, Neuronal Plasticity, Normal, Obsessive-Compulsive Disorder, Overview, Pet, Practice, Prefrontal Cortex, Primary Motor Cortex, PUBMED, Rehabilitation, Response-Inhibition, Review, Science, Sources, Supplementary Eye Field, Systematic, Training, Web of Science, Working-Memory Capacity

? Wayne, P.M., Kiel, D.P., Krebs, D.E., Davis, R.B., Savetsky-German, J., Connelly, M. and Buring, J.E. (2007), The effects of Tai Chi on bone mineral density in postmenopausal women: A systematic review. *Archives of Physical Medicine and Rehabilitation*, **88** (5), 673-680.

Full Text: [2007\Arc Phy Med Reh88, 673.pdf](2007/Arc%20Phy%20Med%20Reh88,%20673.pdf)

Abstract: Objective: To evaluate the evidence for Tai Chi as an intervention to reduce rate of bone loss in postmenopausal women.

Data Sources: Literature search using Medline, Science Citation Index, Cochrane databases, China Biological Medicine Database, and additional manual reference searches of retrieved articles and personal libraries.

Study Selection: Randomized controlled trials (RCTs), prospective cohort studies, and cross-sectional studies that included Tai Chi as an intervention, and had at least 1 outcome related to measurement of bone mineral density (BMD).

Data Extraction: Authors critically reviewed studies, evaluated methodologic quality, and synthesized study results in a summary table.

Data Synthesis: Six controlled studies were identified by our search. There were 2 RCTs, 2 nonrandomized prospective parallel cohort studies, and 2 cross-sectional studies. The 2 RCTs and 1 of the prospective cohort studies suggested that Tai Chi-naive women who participated in Tai Chi training exhibited reduced rates of postmenopausal declines in BMD. Crosssectional studies suggested that long-term Tai Chi practitioners had higher BMD than age-matched sedentary controls, and had slower rates of postmenopausal BMD decline. No adverse effects related to Tai Chi were reported in any trial.

Conclusions: Conclusions on the impact of Tai Chi on BMD are limited by the quantity and quality of research to date. This limited evidence suggests Tai Chi may be an effective, safe, and practical intervention for maintaining BMD in postmenopausal women. In combination with research that indicates Tai Chi can positively impact other risk factors associated with low BMD (eg, reduced fall frequency, increased musculoskeletal strength), further methodologically sound research is warranted to better evaluate the impact of Tai Chi practice on BNID and fracture risk in postmenopausal women.

Keywords: Bone Mineral Density, Exercise, Osteopenia, Osteoporosis, Rehabilitation, Tai Chi, Quality-Of-Life, Osteoporotic Fractures, Older-Adults, Cardiorespiratory Function, Rheumatoid-Arthritis, Chuan Practitioners, Postural Stability, Aerobic Exercise, Controlled-Trial, Balance

? Myburgh, C., Larsen, A.H. and Hartvigsen, J. (2008), A systematic, critical review of manual palpation for identifying myofascial trigger points: Evidence and clinical significance. *Archives of Physical Medicine and Rehabilitation*, **89** (6), 1169-1176.

Full Text: [2008\Arc Phy Med Reh89, 1169.pdf](2008/Arc%20Phy%20Med%20Reh89,%201169.pdf)

Abstract: Objective: To determine the reproducibility of manual palpation in identifying trigger points based on a systematic review of available literature. Data Sources: Medline (1965-2007), CINHAL (1982-2007), ISI Web of Science (1945-2007), and MANTIS (1966-2007) databases and reference lists of articles. Study Selection: Reproducibility studies relating to identification and diagnosis of trigger points through palpation. Acceptable studies were required to specifically consider either inter- or intrarater reliability of trigger point identification through manual palpation and include K statistics as part of their statistical assessment. Data Extraction: Three independent reviewers considered the studies for inclusion and rated their methodologic quality based on the Standards for Reporting of Diagnostic Accuracy guidelines for the reporting of diagnostic studies. Data Synthesis: Eleven studies were initially included; however, 5 were subsequently excluded based on the inclusion and exclusion criteria. Only 2 studies were judged to be of high quality, and the level of evidence criteria suggested that, at best, moderate evidence could be found from which to make pronouncements on the literature. Only local tenderness of the trapezius (kappa range, .15-62) and pain referral of the gluteus medius (kappa range, .298-.487) and quadratus lumborum (kappa range, .36-501) were found to be reproducible. Conclusions: The methodologic quality of the majority of studies for the purpose of establishing trigger point reproducibility is generally poor. More high-quality studies are needed to comment on this procedure. Clinicians and scientists are urged to move toward simpler, global assessments of patient status.

Keywords: Agreement, Assessment, Common, Criteria, Databases, Diagnosis, Differential-Diagnosis, Extraction, Fibromyalgia, Guidelines, Interrater Reliability, ISI, Literature, Low-Back-Pain, Myofascial Pain Syndromes, Pain, Palpation, Points, Rehabilitation, Reliability, Review, Review [Publication Type], Science, Sources, Statistical, Statistics, Systematic, Systematic Review, Tender Points, Validity, Web of Science

? Bovend’Eerdt, T.J., Newman, M., Barker, K., Dawes, H., Minelli, C. and Wade, D.T. (2008), The effects of stretching in spasticity: A systematic review. *Archives of Physical Medicine and Rehabilitation*, **89** (7), 1395-1406.

Full Text: [2008\Arc Phy Med Reh89, 1395.pdf](2008/Arc%20Phy%20Med%20Reh89,%201395.pdf)

Abstract: Objectives: To investigate the general effect of stretching on spasticity and to explore the complexity of stretching in patients with spasticity. Data Sources: Two researchers independently performed a systematic literature search using the databases: Medline, PEDro, Cochrane library, Web of Science, CINAHL, and Allied and Complementary Medicine. Study Selection: Studies on adults receiving a stretching technique to reduce spasticity were included. Data Extraction: Randomized controlled trials (RCTs) were assessed on the PEDro scale for methodologic quality. Thirteen items from the CONSORT list and the Critical Appraisal Skills Program guideline were used to assess the methodologic quality of the other studies. Data Synthesis: RCTs (n=10) and other clinical trials (n = 11) were included. The methodologic quality of the RCTs was low, varying between 4 and 8 on the PEDro scale. All studies show great diversity at the levels of methodology, population, intervention, and outcome measures making a meta-analysis not feasible. Both manual and mechanical stretching methods were studied. Stretching protocols were generally inadequately described and poorly standardized. The outcome measures used often assessed impairments such as available range of motion but were unable to distinguish between neural and nonneural components of spasticity. Associated functional benefits were not usually investigated. Although there is some positive evidence supporting the immediate effects of 1 stretching session, it remains unclear how long these effects abide and its long-term consequences. Conclusions: There is a wide diversity in studies investigating the effects of stretching on spasticity, and the available evidence on its clinical benefit is overall inconclusive. We recognize the need for consensus on a paradigm for stretching and for good-quality studies. Future research should address this issue and should investigate the clinical importance of the short- and long-term effects.

Keywords: Acquired Brain-Injury, Adults, Ankle Mobility, Clinical Trials, Cochrane, Consort, Critical, Databases, Extraction, Functional, Immobilized Muscle, Intermittent Stretch, Intervention, Knee Movements, Literature, Meta-Analysis, Methodology, Multiple-Sclerosis, Muscle Spasticity, Outcome, Randomized Controlled Trials, Randomized Controlled-Trial, Rehabilitation, Research, Researchers, Review, Review [Publication Type], Science, Sources, Spinal-Cord Injuries, Stroke Patients, Systematic, Systematic Review, Term Muscle Stretch, Web of Science

? Shadgan, B., Roig, M., HajGhanbari, B. and Reid, W.D. (2010), Top-cited articles in rehabilitation. *Archives of Physical Medicine and Rehabilitation*, **91** (5), 806-815.

Full Text: [2010\Arc Phy Med Reh91, 806.pdf](2010/Arc%20Phy%20Med%20Reh91,%20806.pdf)

Abstract: Objective: To identify the 100 top-cited articles ever published in rehabilitation journals and to analyze their characteristics as a quantitative approach to investigating the quality and evolution of rehabilitation research. Data Sources: The Institute for Scientific Information Web of Knowledge Database and the 2007 and 2008 Journal Citation Report Science Editions were used to retrieve the 100 top-cited articles from 30 rehabilitation dedicated journals. Study Selection: The 100 top-cited articles included randomized controlled trials, case-control studies, case series studies, case reports, methodologic studies, systematic reviews, narrative reviews, and expert opinions. Data Extraction: Two independent reviewers performed data extraction from the retrieved articles and compared their results. The Sackett’s initial rules of evidence were used to categorize the type of study design as well as to evaluate the level of evidence provided by the results of the 100 top-cited articles. Data Synthesis: Among the 45,700 articles published in these journals, the 100 top-cited articles were published between 1959 and 2002 with an average of 200 citations an article (range, 131-1109). Top-cited articles were all English-language, primarily from North America (United States=67%; Canada=11%) and published in 11 journals led by the Archives of Physical Medicine and Rehabilitation. Eighty-four percent of the articles were original publications and were most commonly prospective (76%) case series studies (67%) that used human subjects (96%) providing level 4 evidence. Neurorehabilitation (41%), disability (19%), and biomechanics (18%) were the most common fields of study. Conclusions: We demonstrated that methodologic observational studies performed in North America and published in English have had the highest citations in rehabilitation journals.

Keywords: 100 Citation-Classics, Archives, Articles, Association, Bias, Bibliometrics, Case Reports, Case Series, Case-Control, Characteristics, Citation, Citations, Database, English, Evolution, Extraction, Human, Institute for Scientific Information, Journal Citation Report, Journals, Knowledge, Narrative, Occupational-Medicine, Physical Therapy Modalities, Physical-Therapy, Publications, Quantitative, Randomized Controlled Trials, Rehabilitation, Research, Review [Publication Type], Science, Sources, Study Design, Synthesis, Web of Knowledge

? Simmons-Mackie, N., Raymer, A., Armstrong, E., Holland, A. and Cherney, L.R. (2010), Communication partner training in aphasia: A systematic review. *Archives of Physical Medicine and Rehabilitation*, **91** (12), 1814-1837.

Full Text: [2010\Arc Phy Med Reh91, 1814.pdf](2010/Arc%20Phy%20Med%20Reh91,%201814.pdf)

Abstract: Simmons-Mackie N, Raymer A, Armstrong E, Holland A, Cherney LR. Communication partner training in aphasia: a systematic review. Arch Phys Med Rehabil 2010;91: 1814-37. Objectives: To describe the effects of communication partner training on persons with aphasia and their communication partners. Specifically the systematic review addressed 3 clinical questions regarding the impact of partner training on language, communication activity and participation, psychosocial adjustment, and quality of life for adults with aphasia and their communication partners. Data Sources: Twenty-three terms were used to search 12 electronic databases (eg, PubMed, CINAHL, PsychINFO, Psych Articles, CSA Linguistics and Language Behavior Abstracts, Social Sciences Citation Index [Web of Science], SUMSearch, TRIP, EMBASE, REHABDATA, National Library for Health, Cochrane Database of Systematic Reviews) and the journal “Aphasiology.” References from all relevant articles were hand-searched. Study Selection: Two reviewers independently applied inclusion criteria to select potential relevant articles from the titles and abstracts of references retrieved by the literature search. The full text of the remaining articles was reviewed by a 5-member panel, resulting in a corpus of 31 studies that met the final inclusion criteria. Data Extraction: Two independent reviewers extracted the descriptive data related to the participants, the intervention, the outcome measures, and the results. Data Synthesis: The 5-member review team by consensus classified the studies using the American Academy of Neurology system for classification of evidence (2004). Conclusions: Evidence shows that communication partner training is effective in improving communication activities and/or participation of the communication partner and is probably effective in improving communication activities and/or participation of persons with chronic aphasia when they are interacting with trained communication partners. There is insufficient evidence to make recommendations related to the impact of partner training on persons with acute aphasia or the impact of training on language impairment, psychosocial adjustment, or quality of life for either the person with aphasia or the communication partner.

Keywords: Adults, Aphasia, Caregivers, Chronic, Classification, Clinical, Communication, Consensus, Controlled-Trial, Conversation Partners, Criteria, Data, Databases, Evidence, Family-Therapy, Impact, Intervention, Journal, Life, Literature, N, Outcome, Outcome Measures, Outcomes, Participation, People, Person, Potential, Psychosocial, Psychosocial Adjustment, Pubmed, Quality, Quality of, Quality of Life, Quality-of-Life, Recommendations, References, Rehabilitation, Review, Stroke-Induced Aphasia, Synthesis, Systematic Review, Training, Treatment Outcome, Volunteers

? Grimby, G. (2010), Top cited articles in rehabilitation: Additional list of articles. *Archives of Physical Medicine and Rehabilitation*, **91** (12), 1960-1961.

Full Text: [2010\Arc Phy Med Reh91, 1960.pdf](2010/Arc%20Phy%20Med%20Reh91,%201960.pdf)

Keywords: Distinct Scientific Fields

? Shadgan, B., Roig, M. and HajGhanbari, B. (2010), Top cited articles in rehabilitation: additional list of articles response. *Archives of Physical Medicine and Rehabilitation*, **91** (12), 1961-1962.

Full Text: [2010\Arc Phy Med Reh91, 1961.pdf](2010/Arc%20Phy%20Med%20Reh91,%201961.pdf)

Keywords: Citation-Classics, Journals, Medicine

? Cheung, V.H., Gray, L. and Karunanithi, M. (2011), Review of accelerometry for determining daily activity among elderly patients. *Archives of Physical Medicine and Rehabilitation*, **92** (6), 998-1014.

Full Text: [2011\Arc Phy Med Reh92, 998.pdf](2011/Arc%20Phy%20Med%20Reh92,%20998.pdf)

Abstract: Cheung VH, Gray L, Karunanithi M. Review of accelerometry for determining daily activity among elderly patients. Arch Phys Med Rehabil 2011;92:998-1014. Objectives: To review studies that used accelerometers to classify human movements and to appraise their potential to determine the activities of older patients in hospital settings. Data Sources: MEDLINE, CINAHL, and Web of Science electronic databases. A search constraint of articles published in English language between January 1980 and March 2010 was applied. Study Selection: All studies that validated the use of accelerometers to classify human postural movements and mobility were included. Studies included participants from any age group. All types of accelerometers were included. Outcome measures criteria explored within the studies were comparisons of derived classifications of postural movements and mobility against those made by using observations. Based on these criteria, 54 studies were selected for detailed review from 526 initially identified studies. Data Extraction: Data were extracted by the first author and included characteristics of study participants, accelerometers used, body positions of device attachment, study setting, duration, methods, results, and limitations of the validation studies. Data Synthesis: The accelerometer-based monitoring technique was investigated predominantly on a small sample of healthy adult participants in a laboratory setting. Most studies applied multiple accelerometers on the sternum, wrists, thighs, and shanks of participants. Most studies collected validation data while participants performed a predefined standardized activity protocol. Conclusions: Accelerometer devices have the potential to monitor human movements continuously to determine postural movements and mobility for the assessment of functional ability. Future studies should focus on long-term monitoring of free daily activity of a large sample of mobility-impaired or older hospitalized patients, who are at risk for functional decline. Use of a single waist-mounted triaxial accelerometer would be the most practical and useful option.

Keywords: Acceleration, Activities, Activity Monitor, Adult, Ambulatory Accelerometry, Ambulatory Monitoring, Assessment, Author, Classification, Daily Physical-Activity, Databases, Dwelling Older-Adults, Elderly, Energy-Expenditure, Extraction, Functional, Hospital, Hospital Rehabilitation, Human, Medline, Monitoring, Motion Sensors, Motor Activity, Movement, Older Patients, Protocol, Rehabilitation, Review, Review Literature, Risk, Science, Sources, Triaxial Accelerometer, Validation, Walking, Wearable Sensors, Web of Science

? Disseldorp, L.M., Nieuwenhuis, M.K., Van Baar, M.E. and Mouton, L.J. (2011), Physical fitness in people after burn injury: A systematic review. *Archives of Physical Medicine and Rehabilitation*, **92** (9), 1501-1510.

Full Text: [2011\Arc Phy Med Reh92, 1501.pdf](2011/Arc%20Phy%20Med%20Reh92,%201501.pdf)

Abstract: Disseldorp LM, Nieuwenhuis MK, Van Baar ME, Mouton U. Physical fitness in people after burn injury: a systematic review. Arch Phys Med Rehabil 2011;92:1501-10. Objective: To gain insight into the physical fitness of people after burn injury compared with healthy subjects, and to present an overview of the effectiveness of exercise training programs in improving physical fitness in people after burn injury. Data Sources: Electronic databases EMBASE, Pub Med, and Web of Science were searched for relevant publications. Additionally, references from retrieved publications were checked. Study Selection: The review includes studies that provide quantitative data from objective measures of physical fitness of both the intervention group and the control group. Data Extraction: Characteristics of each study such as study design, institution, and intervention are reported, as well as mean ages and burn sizes of the subjects. Results are divided into 5 components of physical fitness muscular strength, muscular endurance, body composition, cardiorespiratory endurance, and flexibility and reported for each component separately. Data Synthesis: Eleven studies met the inclusion criteria, and their methodological quality was assessed using the PEDro score and a modified Sackett scale. Six studies were used for the comparison of physical fitness in burned and nonburned subjects, and 9 studies for evaluating the effectiveness of exercise training programs. Conclusions: Physical fitness is affected in people with extensive burns, and exercise training programs can bring on relevant improvements in all components. However, because of the great similarities in the subjects and protocols used in the included studies, the current knowledge is incomplete. Future research should include people of all ages with a broad range of burn sizes, for both short-term and long-term outcomes.

Keywords: Body Composition, Burn Injury, Burns, Characteristics, Children, Control, Databases, Design, Effectiveness, Embase, Exercise, Extraction, Injury, Insight, Intervention, Knowledge, Lean Mass, Modified, Muscle Strength, Outcomes, Outcomes Assessment, Overview, Physical Fitness, Program, Pub Med, Publications, Quantitative, Rehabilitation, Rehabilitation, Research, Review, Science, Selection, Sources, Strength, Supervised Exercise, Synthesis, Systematic, Systematic Review, Thermal-Injury, Training, Web of Science, X-Ray Absorptiometry, Young-Adults

? Louw, A., Diener, I., Butler, D.S. and Puentedura, E.J. (2011), The effect of neuroscience education on pain, disability, anxiety, and stress in chronic musculoskeletal pain. *Archives of Physical Medicine and Rehabilitation*, **92** (12), 2041-2056.

Full Text: [2011\Arc Phy Med Reh92, 2041.pdf](2011/Arc%20Phy%20Med%20Reh92,%202041.pdf)

Abstract: Objective: To evaluate the evidence for the effectiveness of neuroscience education (NE) for pain, disability, anxiety, and stress in chronic musculoskeletal (MSK) pain. Data Sources: Systematic searches were conducted on Biomed Central, BMJ.com, CINAHL, the Cochrane Library, NLM Central Gateway, OVID, Pro Quest (Digital Dissertations), PsycInfo, PubMed/Medline, Science Direct, and Web of Science. Secondary searching (PEARLing) was undertaken, whereby reference lists of the selected articles were reviewed for additional references not identified in the primary search. Study Selection: All experimental studies including randomized controlled trials (RCTs), nonrandomized clinical trials, and case series evaluating the effect of NE on pain, disability, anxiety, and stress for chronic MSK pain were considered for inclusion. Additional limitations: studies published in English, published within the last 10 years, and patients older than 18 years. No limitations were set on specific outcome measures of pain, disability, anxiety, and stress. Data Extraction: Data were extracted using the participants, interventions, comparison, and outcomes (PICO) approach. Data Synthesis: Methodological quality was assessed by 2 reviewers using the Critical Review Form Quantitative Studies. This review includes 8 studies comprising 6 high-quality RCTs, 1 pseudo-RCT, and 1 comparative study involving 401 subjects. Most articles were of good quality, with no studies rated as poor or fair. Heterogeneity across the studies with respect to participants, interventions evaluated, and outcome measures used prevented meta-analyses. Narrative synthesis of results, based on effect size, established compelling evidence that NE may be effective in reducing pain ratings, increasing function, addressing catastrophization, and improving movement in chronic MSK pain. Conclusions: For chronic MSK pain disorders, there is compelling evidence that an educational strategy addressing neurophysiology and neurobiology of pain can have a positive effect on pain, disability, catastrophization, and physical performance.

Keywords: Anxiety, Case Series, Chronic Widespread Pain, Chronic-Fatigue-Syndrome, Clinical Trials, Cochrane, Comparative Study, Consort Statement, Critical, Disability, Dissertations, Education, Effectiveness, English, Experimental, Extraction, Fear-Avoidance Beliefs, Interventions, Low-Back-Pain, Movement, Musculoskeletal System, Neurophysiology, Neurophysiology Education, Neurosciences, Outcome, Outcomes, Pain, Patients, Physical-Therapy Practice, Physiology Education, Primary, Quality, Randomized Controlled Trials, Randomized Controlled-Trial, Rehabilitation, Review, Science, Selection, Sources, Strategy, Stress, Synthesis, Systematic, Systematic Reviews, Web of Science

? Cruz-Ferreira, A., Fernandes, J., Laranjo, L., Bernardo, L.M. and Silva, A. (2011), A systematic review of the effects of pilates method of exercise in healthy people. *Archives of Physical Medicine and Rehabilitation*, **92** (12), 2071-2081.

Full Text: [2011\Arc Phy Med Reh92, 2071.pdf](2011/Arc%20Phy%20Med%20Reh92,%202071.pdf)

Abstract: Objective: To evaluate evidence for the effectiveness of the Pilates method of exercise (PME) in healthy people. Data Sources: Published research was identified by searching Science Direct, MEDLINE, PubMed, SPORTDiscus, PEDro, Cochrane Central Register of Controlled Trials, CINAHL, and Web of Science. Study Selection: Research studies published from inception to May 7, 2011 were selected for evaluation. Two reviewers independently applied the inclusion criteria to selected potential studies. Studies were included if they were published in a peer-reviewed journal, written in the English language, conducted as a randomized controlled trial (RCT) or quasi-RCT in healthy people, had an inactive and/or exercise control group(s), included key study outcomes, and used the PME as the study intervention in at least 1 study arm. Data Extraction: Two reviewers independently extracted data (study, design, subjects, intervention, key outcomes results), applied the Physiotherapy Evidence Database (PEDro) scale to assess the method quality of selected studies, and determined the strength of the evidence using the best evidence synthesis grading system. Data Synthesis: Sixteen studies met the inclusion criteria. PEDro scale values ranged from 3 to 7 (mean, 4.1), indicating a low level of scientific rigor. The outcomes studied most often were flexibility, muscular endurance, strength, and postural alignment. The PME appears to be effective in improving flexibility (strong evidence), dynamic balance (strong evidence), and muscular endurance (moderate evidence) in healthy people. Conclusions: There was strong evidence to support the use of the PME at least to the end of training to improve flexibility and dynamic balance and moderate evidence to enhance muscular endurance. Future RCTs should focus on the components of blinding, concealed allocation, subject adherence, intention-to-treat analysis, and follow-up designs.

Keywords: Adherence, Adults, Analysis, Balance, Body-Composition, Clinical-Trials, Cochrane, Control, Database, Design, Effectiveness, English, Evaluation, Exercise, Extraction, Follow-Up, Intervention, Interventions, Journal, Low, Low-Back-Pain, Medline, Outcomes, Pedro Scale, Physiotherapy, Pilates Training, Program, Pubmed, Quality, Randomized Controlled Trial, Randomized Controlled-Trials, Rehabilitation, Research, Review, Science, Selection, Sources, Strength, Studies Method, Synthesis, Systematic, Systematic Review, Training, Web of Science, Women

# Title: Archives des Sciences

Full Journal Title: Archives des Sciences

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Indermuehle, N., Oertli, B., Menetrey, N. and Sager, L. (2004), An overview of methods potentially suitable for pond biodiversity assessment. *Archives des Sciences*, **57** (2-3), 131-139.

Abstract: This study provides a general overview of existing methods potentially suitable for assessing pond biodiversity. A bibliographic review allowed to evaluate the number of papers and consequently the interest of scientific investigation allocated (i) to different freshwater assessment objectives such as biodiversity water quality or hydrological functions, and (II) to biodiversity assessment for each of four waterbody types (ponds, wetlands, rivers & streams, lakes). The review was conducted using ISI Web of Science and browsing grey literature (reports from environment agencies and research institutes). Both methods designed for fundamental research and site management were taken into account. The results emphasize that biological assessment methods for routine monitoring have been developed mostly for streams and rivers during the last two decades, and that lentic freshwater habitats have been rather neglected. Ponds, in particular have been widely ignored despite of their significant contribution to regional biodiversity. Freshwater assessment methods mainly focus on water quality and hydrological aspects while biodiversity is underrepresented.

Keywords: Assessment, Bibliographic, Biodiversity, Conservation Value, Contribution, Diversity, Environment, Integrity, Interest, Invertebrates, ISI, Lakes, Literature, Management, Management, Mesh Size, Monitoring, Odonata, Overview, Papers, Research, Review, Science, Small Waterbodies, Species Richness, Species Richness, Streams, Web of Science, Wetlands

# Title: Archives of Virology

Full Journal Title: Archives of Virology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0304-8608

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Horzinek, M.C. (1999), Importance and impact of veterinary virology in Germany. *Archives of Virology*, Suppl, 63-72.

Abstract: The causative agent of tobacco mosaic and of foot and mouth disease (FMD) were recognized in 1898 as “filterable” or “invisible” - and eventually termed “virus”. Four years later the viral aetiology of yellow fever was established, and the new discipline took off. Thus animal virology started with a veterinary problem, and Germany’s contribution during the following decades came mainly from the chairs of veterinary teaching and research establishments in Giessen, Munich and Hanover, the Riems Institute, and the Federal Research Institute for Animal Virus Diseases in Tubingen. From a superficial bibliometric analysis, a wide divergence in impact figures is noted, with excellent contributions in international virology journals and lesser papers in German veterinary journals. The publications in the observed time frame reveal a fascination by virion structure, physical characteristics and structure-function relationships with little work published in journals dedicated to immunology and pathogenesis.

Keywords: Bibliometric, Bibliometric Analysis, Germany, Immunology, Impact, Journals, Papers, Publications, Research, Tobacco, Virology

# Title: Archives of Virology Supplement

Full Journal Title: Archives of Virology Supplement

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Horzinek, M. (1999), Importance and impact of veterinary virology in Germany. *Archives of Virology Supplement*, (15), 63-72.

Abstract: The causative agent of tobacco mosaic and of foot and mouth disease (FMD) were recognized in 1898 as “filterable” or “invisible” - and eventually termed “virus”. Four years later the viral aetiology of yellow fever was established, and the new discipline took off. Thus animal virology started with a veterinary problem, and Germany’s contribution during the following decades came mainly from the chairs of veterinary teaching and research establishments in Giessen, Munich and Hanover, the Riems Institute, and the Federal Research Institute for Animal Virus Diseases in Tubingen. From a superficial bibliometric analysis, a wide divergence in impact figures is noted, with excellent contributions in international virology journals and lesser papers in German veterinary journals. The publications in the observed time frame reveal a fascination by virion structure, physical characteristics and structure-function relationships with little work published in journals dedicated to immunology andpathogenesis.

# Title: Archives of Womens Mental Health

Full Journal Title: Archives of Womens Mental Health

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Eberhard-Gran, M., Garthus-Niegel, S., Garthus-Niegel, K. and Eskild, A. (2010), Postnatal care: A cross-cultural and historical perspective. *Archives of Womens Mental Health*, **13** (6), 459-466.

Full Text: [2010\Arc Wom Men Hea13, 459.pdf](2010/Arc%20Wom%20Men%20Hea13,%20459.pdf)

Abstract: Childbirth and the immediate postpartum period represent a major transition in a woman’s life. This period is considered a vulnerable time for the mother and child in most societies, and rituals for this transition are common. In this study, we present some examples of postpartum customs in a cross-cultural and historical perspective. Also, we present the current knowledge on the possible impact of postnatal care on mental health. Systematic literature searches were performed in Medline, PsycINFO, and the Science Citation Index Expanded (ISI) for the time period 1966 through May 2010. Reference lists in books on pregnancy and childbirth from the University Library in Oslo were used to obtain additional information. We found that the postnatal period seems to be universally defined as 40 days. Most cultures have special postnatal customs, including special diet, isolation, rest, and assistance for the mother. The uniformity of customs across different cultures is striking. However, many postnatal customs that were common before 1950 are no longer existent. The focus on rest and assistance for the mother after delivery has gradually decreased. Studies of associations of postnatal care and mental health in the mother are limited and show inconsistent results. More knowledge is needed on postnatal care and mental health.

Keywords: Birth, Childbirth, Citation, Cross-Cultural Customs, Diet, Historical Perspectives, Illness, Impact, ISI, Japanese Mothers, Life Events, Literature, Medline, Mental Health, Postnatal Care, Postpartum Depression, Pregnancy, Review, Risk-Factors, Science, Science Citation Index, Science Citation Index Expanded, Social Support, Women

# Title: Archives Roumaines de Pathologie Expérimentale et de Microbiologie

(Arch. Roum. Pathol. Exp. Microbiol.)

Full Journal Title: Archives Roumaines de Pathologie Experimentale et de Microbiologie

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Constantiniu, S. (1990), Isolation of Yersinia group in human infections, animals and environment factors. *Archives Roumaines de Pathologie Expérimentale et de Microbiologie*, **49** (2), 131-137.

Abstract: The presence of Y. enterocolitica and Y. pseudotuberculosis was studied in 4479 enteritis cases, 430 children, presenting appendicular syndrome, and 60 hospitalized patients with arthritis and Reiter syndrome. Y. enteritis was detected in 41 (0.9%) enteritis cases, 15 (3.4%) appendectomized children and 5 (8.3%) arthritis cases. Antibodies to Y. pseudotuberculosis were detected in 2 (3.3%) arthritis patients. Y. enterocolitica was isolated in swine, fish and environment factors (water, soil, food). Y. pseudotuberculosis was isolated in soil. The isolated strains belonged to biotypes 1, 2, 4 and serotypes 0: 3; 0: 5; 0: 5.27; 0 (5), 6, 7, 8; 0 (6); 0: 9; some were non-typable and polyagglutinable. The strains were sensitive to bacteriophages for Yersinia, obtained in our laboratory.

# Title: Archives of Surgery

Full Journal Title: [Archives of Surgery](http://archsurg.ama-assn.org/contents-by-date.0.dtl)

ISO Abbreviated Title: Arch. Surg.

JCR Abbreviated Title: Arch Surg-Chicago

ISSN: 0004-0010

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Medical Assoc

Publisher Address: 515 N State St, Chicago, IL 60610

Subject Categories:

Surgery: Impact Factor

? Holcroft, J.W. (1990), Who should be responsible for care of the critically ill surgical patient. *Archives of Surgery*, **125** (9), 1103-1104.

Full Text: Arc Sur125, 1103.pdf

? Lee, C.H. and Lee, Y.C. (2003), Surgery in Taiwan. *Archives of Surgery*, **138** (8), 922-927.

Full Text: [2003\Arc Sur138, 922.pdf](2003/Arc%20Sur138,%20922.pdf)

Abstract: Taiwan is an island located southeast of the Asian continent. Surgery in Taiwan has changed rapidly during the past 20 years. Approximately 4500 surgeons (including orthopedic surgeons, neurosurgeons, and urologists) serve a population of 23, million on this 36000-km(2) island. Much progress has been made in the development of basic science surgical research, the use of new technology, and the improvement of the quality of care of our patients. National Health Insurance was launched in 1995 and has had a great impact on the clinical practice of surgery. To attract more medical graduates to the specialty of surgery and enrich the resources of manpower, reasonable reimbursement and a new education program with efficient core content but no prolongation of the training period are needed.

Keywords: Repair, Rats

? Kurichi, J.E., Kelz, R.R. and Sonnad, S.S. (2005), Women authors of surgical research. *Archives of Surgery*, **140** (11), 1074-1077.

Full Text: [2005\Arc Sur140, 1074.pdf](2005/Arc%20Sur140,%201074.pdf)

Abstract: Hypothesis: The number of women authors in the surgical literature has increased during the past 20 years. Design: Randomly selected issues of odd-year journals in Archives of Surgery and Annals of Surgery from January 1, 1985, to December 31, 2003, were reviewed. We determined the gender of each author and reported trends in the occurrence of women authors over time. Results: The percentage of women authors has increased over time and parallels the percentage of women faculty in academic surgery positions. A much higher percentage of women authors than men authors are non-physicians. The trend for increased authorship by women over time was significant in Archives of Surgery. Conclusion: Although the number of women first authors is low, their contributions to the field of surgery should be acknowledged, and efforts to provide women with the resources and opportunities to conduct research and publish their findings should be a focus for surgical departments looking to increase their research productivity.

Keywords: Authorship, Faculty, Field, First, Gender, Journals, Literature, Men, Productivity, Research, Research Productivity, Surgery, Trend, Trends, Women

# Title: Archives of Toxicology

Full Journal Title: [Archives of Toxicology](http://www.springerlink.com/content/100462/)

ISO Abbreviated Title: Arch. Toxicol.

JCR Abbreviated Title: Arch Toxicol

ISSN: 0340-5761

Issues/Year: 8

Journal Country/Territory: Germany

Language: English

Publisher: Springer Verlag

Publisher Address: 175 Fifth Ave, New York, NY 10010

Subject Categories:

Toxicology: Impact Factor

? Kurttio, P., Savolainen, K., Naukkarinen, A., Kosma, V.M., Tuomisto, L., Penttilä, I. and Jolkkonen, J. (1991), Urinary excretion of ethylenethiourea and kidney morphology in rats after continuous oral exposure to nabam or ethylenethiourea. *Archives of Toxicology*, **65** (5), 381-385.

Full Text: 1991\Arc Tox65, 381.pdf

Abstract: Nabam, an ethylenebisdithiocarbamate (EBDC), is an agricultural fungicide. Ethylenethiourea (ETU), widely used in the rubber industry, is a degradation and byproduct of metabolism and of storage and production of EBDCs. Kidney function and morphology, and urinary excretion of ETU, were studied in rats exposed to nabam or ETU in drinking water for 28 days. The concentrations of nabam in drinking water were 0, 50, 100 or 200 mg/l, and of ETU 0, 100, 200 or 300 mg/l. Both compounds decreased body weight gain but did not significantly affect urinary sodium, potassium, glucose, or protein excretion, or urinary osmolality. Urinary vasopressin was also unaltered after exposure to nabam or ETU. High doses of ETU resulted in ultrastructural alterations in epithelial cells of renal proximal tubuli. ETU was excreted in urine after exposure to both nabam and ETU. There seemed to be a threshold dose of ETU below which no ultrastructural alterations in kidney occurred.

Keywords: Ethylenethiourea, Disodium Ethylenebisdithiocarbamate, Kidney Function, Rats, Ethylenebisdithiocarbamate Fungicides, Cerebrospinal-Fluid, Pregnant Rats, Metabolism, Vasopressin, Invivo, Zineb, Maneb, Mice, ETU

? Ogoshi, K., Nanzai, Y. and Moriyama, T. (1992), Decrease in bone strength of cadmium-treated young and old rats. *Archives of Toxicology*, **66** (5), 315-320.

Full Text: 1992\Arc Tox66, 315.pdf

Abstract: A decrease in mechanical strength of bones was observed both in young and old rats for long periods of administration of cadmium. Young (3-week-old) female rats were given 0 (control), 5 and 10 ppm cadmium in drinking water, respectively, for 20 weeks. Old (18-month-old) female rats were given 0 (control) and 40 ppm cadmium in drinking water, respectively, for 7 months. The compression strengths of bones of young rats which were given 10 ppm cadmium, and those of old rats which were given 40 ppm cadmium, significantly decreased at the distal end portion of femur. Cadmium contents in bones in the 10 ppm and 40 ppm groups were about 110 and 210 ng/g dry weight, respectively. The present result confirmed that cadmium has a lesional effect on the mechanical strength of bone at the concentration of 100-200 ng/g in dry weight of bone, for both young and old rats.

? Komulainen, H., Huuskonen, H., Kosma, V.M., Lötjönen, S. and Vartiainen, T. (1994), Toxic effects and excretion in urine of 3-chloro-4-(dichloromethyl)-5-hydroxy-2 (5H)-furanone (MX) in the after a single oral dose. *Archives of Toxicology*, **68** (6), 398-400.

Full Text: 1994\Arc Tox68, 398.pdf

Abstract: Toxic effects and excretion in urine of 3-chloro-4-(dichloromethyl)-5-hydroxy-2 (5H)-furanone (MX), the potent mutagenic compound in chlorinated drinking water, was evaluated in male Wistar rats by the up-and-down method. MX was dosed by gavage in deionized water at doses between 200 mg/kg and 600 mg/kg, for one animal at a time, and effects were observed for 14 days. Urine was collected in metabolism cages up to 72 h after dosing for chemical analysis of MX in urine. The animals receiving 200 mg/kg did not display clear clinical signs but at higher doses the signs of ill effects included dyspnea, laborious, wheezing and gasping breathing, decreased spontaneous motor activity, ataxia, nostril discharges, catalepsia and cyanosis. In necropsy bronchi contained foamy liquid and the lungs appeared edematous and spongy. The stomach cavity was expanded due to accumulation of fluid and gas and the gastrointestinal tract from stomach to caecum was reddish. Microscopically, the main target organ of toxicity was the gastrointestinal tract (diffuse congestion and necrosis in the mucosa). Signs of toxicity were recorded also in lungs (slight edema) and kidneys (dilated tubules, thin tubular epithelium, brownish tubular and interstitial concretion). The LD50 in 48 h was 230 mg/kg. Only 0.03-0.07% of the dose (200 mg/kg or 300 mg/kg) was excreted in urine as intact MX. The results indicate that at high doses MX has a strong local irritating effect in the gastrointestinal tract and it probably increases liquid permeability in lungs. MX may also cause tubular damage in kidneys. (ABSTRACT TRUNCATED AT 250 WORDS).

Gut, I., Nedelcheva, V., Souček, P., Stopka, P., Vodička, P., Gelboin, H.V. and Ingelman-Sundberg, M. (1996), The role of CYP2E1 and 2B1 in metabolic activation of benzene derivatives. *Archives of Toxicology*, **71** (1-2), 45-56.

Full Text: [A\Arc Tox71, 45.pdf](A/Arc%20Tox71,%2045.pdf)

Abstract: CYP2B1 and 2E1 oxidized toluene, aniline and monochlorobenzene (MCB) to water-soluble metabolites and to products covalently binding to microsomal proteins from male Wistar rats at high efficiency. Oxidation of benzene to covalently binding metabolites was catalysed by CYP2B1 and 2E1 more effectively than the formation of water-soluble metabolites, especially at low benzene levels. Thus, the formation of covalently binding products was inversely related but formation of soluble metabolites was proportional to benzene concentration. 1,4-Benzoquinone was responsible for the majority of covalent binding to microsomal proteins, being suppressed by ascorbate; 1,4-semiquinone was not important, since alpha-tocopherol did not inhibit the covalent binding and ESR showed its rapid decay, if NADPH was available. Specific antibodies and inhibitors confirmed the role of CYP2B1 and 2E1 induction. Covalent binding of benzene to DNA was largely due to benzene oxide; approximately 50% was due to N-7 guanine adduct. CYP2E1 oxidizing benzene via phenol to 1,4-hydroquinone appeared to mediate its further oxidation to 1,4-benzoquinone, which also occurred spontaneously, but was reversed in a reducing environment of microsomes with NADPH. Production of OH radicals in microsomes with NADPH was greatly stimulated by HQ and less by BQ, especially in CYP2E1 induced microsomes, although the quinones themselves failed to produce OH radicals. The quinones could act by simulation of the CYP futile cycle. Therefore, CYP2B1 and 2E1 in rats appeared essential for metabolic activation of benzene derivatives to potentially genotoxic products; BQ dominated the covalent binding of benzene to proteins, whereas DNA adducts were largely due to benzene oxide.

? Bolt, H.M. and Hengstler, J.G. (2008), The past and the future of toxicology. *Archives of Toxicology*, **82**, 1-3.

Full Text: [2008\Arc Tox82, 1.pdf](2008/Arc%20Tox82,%201.pdf)

Keywords: Toxicology

? Bolt, H.M. and Hengstler, J.G. (2008), Most cited articles in the *Archives of Toxicology*: the debate about possibilities and limitations of in vitro toxicity tests and replacement of in vivo studies. *Archives of Toxicology*, **82** (12), 881-883.

Full Text: [2008\Arc Tox82, 881.pdf](2008/Arc%20Tox82,%20881.pdf)

Keywords: Apoptosis, Blood Lead, Cells, Cytotoxicity, Drug-Metabolism, Enzyme-Induction, Hepatotoxicity, In Vivo, Oxidative Stress, Primary Hepatocytes, Toxicity, Toxicology, Transporters

? Bolt, H.M. and Hengstler, J.G. (2010), Most cited articles: metal toxicity, oxidative stress control and induction as well as inhibition of cytochrome P450 enzymes. *Archives of Toxicology*, **84** (12), 903-905

Full Text: [2010\Arc Tox84, 903.pdf](2010/Arc%20Tox84,%20903.pdf)

Keywords: Acid, Cells, Exposure, Gene-Expression, Hepatocytes, Lead, Male Rats, Mechanisms, Methylmercury, Risk-Assessment, Stress

? Bolt, H.M. and Hengstler, J.G. (2011), Most cited articles: ethanol-induced hepatotoxicity, anticarcinogenic effects of polyphenolic compounds in tea, dose-response modeling, novel roles of epoxide hydrolases and arsenic-induced suicidal erythrocyte death. *Archives of Toxicology*, **85** (12), 1485-1489.

Full Text: [2011\Arc Tox85, 1485.pdf](2011/Arc%20Tox85,%201485.pdf)

Keywords: Alcohol, Became, Cancer, Cells, Damage, Dose-Response, Exposure, Isolated Rat Hepatocytes, Modeling, Oxidative Stress, Risk, Toxicology

# Title: Archivos Argentinos de Pediatria

Full Journal Title: Archivos Argentinos de Pediatria

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ossorio, M.F. and Ferrero, F. (2010), Plagiarism in scientific publications. *Archivos Argentinos de Pediatria*, **108** (2), 103-104.

Full Text: 2010\Arc Arg Ped108, 103.pdf

Keywords: Plagiarism, Publications, Scientific Publications

# Title: Archivos de Biologia y Medicina Experimentales

Full Journal Title: Archivos de Biologia y Medicina Experimentales

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Krauskopf, M. and Prat, A.M. (1990), A vision of research in Chile through some scientometric indicators. *Archivos de Biologia y Medicina Experimentales*, **23** (2), 51-64

Full Text: Arc Bio Med Exp23, 51.pdf

Keywords: Indicators, Research, Scientometric

# Title: Archivos de Bronconeumología

Full Journal Title: [Archivos de Bronconeumologia](http://www.archbronconeumol.org/bronco_eng/ctl_servlet?_f=3)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0300-2896

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Tordera, M.P. (2001), *Archivos de Bronconeumología* now included in the Science Citation Index. *Archivos de Bronconeumología*, **37** (9), U11.

Full Text: 2001\Arc Bro37, U11.pdf

Keywords: Citation, Science Citation Index

García, F., Mayoralas, S., Dorgham, A., Granda, I., Perpiñá, M., Casan, P., Xaubet, A., Agustí, A.G.N. and Álvarez-Sala, J.L. (2001), Analysis of the impact of *Archivos de Bronconeumología* by Science Citation. *Archivos de Bronconeumología*, **37** (11), 465-470.

Full Text: 2001\Arc Bro37, 465.pdf

Abstract: Objective: To describe the impact factor of *Archivos de Bronconeumología* from 1997 until 2000 and to identify the patterns of citation of the journal and topics having the greatest impact.

Method: SCISEARCH was used to locate citations of articles published by *Archivos de Bronconeumología* between 1995 and 1999. The following data were collected for each article: year of publication, authors, journal, country of publication, language, specialty or specialties, institution(s), residence of the first author and topic. The impact factor was calculated as the ratio of citations received in one year by articles published in *Archivos de Bronconeumología* during the two previous years and the total number of articles published by *Archivos de Bronconeumología* over the two years under study.

Results: The impact factor of *Archivos de Bronconeumología* was 0.107 in 1997, 0.089 in 1998, 0.105 in 1999 and 0.119 in 2000. Citations were found in a wide range of source journals, with respiratory system publications having little weight. Citations were made mainly by Spanish authors (75%) and self-citation was restrained (21.1%). Topics related to tuberculosis and respiratory infections (23.6% of the citations received) and chronic obstructive pulmonary disease (12.5%) made the greatest impact.

Conclusion: The impact factor of *Archivos de Bronconeumología* is modest, although higher than those of some other publications included in Journal Citation Reports.

Keywords: Archivos, Authors, Bibliometric Indicators, Bibliometry, Bronconeumologia, Citation, Citations, Documentation, Impact, Impact Factor, Index, Journals, Medical-Scientific Activity, Publications, Respiratory, Science, Statistics, System

de Granda-Orive, J.I., Río, F.G., Jiménez, T.G., Ruiz, C.A.J., Reina, S.S. and Valls, R.S. (2002), Analysis and evolution of bibliometric indicators of productivity and readership of articles on smoking appearing in *Archivos de Bronconeumología* from 1970 to 2000. A comparison to others topics in respiratory medicine. *Archivos de Bronconeumología*, **38** (11), 523-529.

Full Text: 2002\Arc Bro38, 523.pdf

Abstract: OBJECTIVES: To analyze the evolution of bibliometric indexes for research on smoking published in *Archivos de Bronconeumología* (AB) from 1970 through 2000, to compare indexes for each of the three decades under study, and to compare the indexes for smoking research with those of other topics in respiratory medicine.

MATERIAL AND METHODS: We reviewed all articles published by AB between 1970 and 2000, recording data on 13 characteristics.

RESULTS: of 2, 198 documents reviewed, 45 (2.04%) were about smoking; 71% of them were published in the last five years. The research came mainly from the most productive four provinces and five hospitals, which produced 68.1% and 50% of the reports, respectively. The first authors were pneumologists in 78.4% of the articles. The productivity index was 1.65, and the mean number of authors per document (collaboration index) was 4±3. The total number of references was 1,230 and the number of references per paper was 27.3±26. AB was the most cited journal. We found no change in obsolescence indexes. Insularity and self citation indexes tended to increase. Topics with productivity indexes that were higher than the index for smoking research were asthma (p < 0.05), respiratory insufficiency and sleep disorders, non-tuberculosis infection, oncology and pleural and interstitial diseases (p < 0.001). The insularity index was higher for tuberculosis than for smoking (p < 0.05).

CONCLUSIONS: Smoking research increased considerably during the period studied. Pulmonologists predominated among the authors of studies on smoking. Bibliometric indexes for smoking evolved as did the indexes for other research. The most frequently cited journal was AB.

Keywords: Smoking, Bibliometrics, Scientific Information, Spanish Scientific Production, Journals, Spain, Publication, Consumption, Information, Language, Authors, Number

? Orive, J.I.D. (2003), Reflections on the impact factor. *Archivos de Bronconeumología*, **39** (9), 409-417.

Full Text: 2003\Arc Bro39, 409.pdf

Keywords: Medical-Scientific Activity, Science-Citation-Index, Spanish Biomedical Journals, Bibliometric Indicators, Respiratory System, Bronconeumologia, Archivos, Bias, Information, Publication

? Benavent, R.A., Zurian, J.C.V., Gomez, M.C., Melendez, R.S. and Molina, C.N. (2004), *Archivos de Bronconeumología*: Among the 3 Spanish medical journals with the highest national impact factors. *Archivos de Bronconeumología*, **40** (12), 563-569.

Full Text: [2004\Arc Bro40, 563.pdf](2004/Arc%20Bro40,%20563.pdf)

Abstract: OBJECTIVE: Citation analysis elucidates patterns of information consumption within professional communities. The aim of this study was to analyze the citations of 87 Spanish medical journals by calculating their impact factors and immediacy indices for 2001, and to estimate the importance of *Archivos de Bronconeumología* within the framework of Spanish medicine. MATERIAL AND METHOD: Eighty-seven Spanish medical journals were included. All were listed in the Spanish Medical Index (Indice Medico Espanol) and in at least one of the following databases: MEDLINE, BIOSIS, EMMASE, or Science Citation Index. References to articles from 1999 through 2001 in citable articles from 2001 were analyzed. Using the method of the Institute for Scientific Information, we calculated the national impact factor and immediacy index for each journal. RESULTS: The journals with the highest national impact factors were Revista Espanola de Quimioterapia (0.894), Medicina Clinica (0.89), and *Archivos de Bronconeumología* (0.732). The self-citation percentage of *Archivos de Bronconeumología* was 18.3% and the immediacy index was 0.033. CONCLUSIONS: The impact factor obtained by *Archivos de Bronconeumología* confirms its importance in Spanish medicine and validates its inclusion as a source journal in Science Citation Index and Journal Citation Report.

Keywords: Bibliometric Indicators, Bibliometrics, Citations, Immediacy Index, Impact Factor, Impact Factor, Impact Factors, Information, Journal, Journals, Medical Journals, Quality, Science Citation Index, Scientific Activity, Scientific Journals, Self-Citation, Spanish Medical Journals

? Orive, J.I.D.G., Rio, F.G., Vazquez, F.R., Sacristan, J.E., Jimenez, T.G. and Sanchez, L.C. (2005), Key words, essential tools for bibliographic research: Analysis of usage in *Archivos de Bronconeumología* for respiratory system knowledge areas. *Archivos de Bronconeumología*, **41** (2), 78-83.

Full Text: [2005\Arc Bro41, 78.pdf](2005/Arc%20Bro41,%2078.pdf)

Abstract: OBJECTIVE: To analyze key word usage in *Archivos de Bronconeumología*, by comparing words used in the journal to those used in the Index Medicus database within various respiratory system knowledge areas, and to determine whether usage has changed over time. MATERIAL AND METHODS: Original articles published in *Archivos de Bronconeumología* from 1994 through 2001 were reviewed manually to gather the key words used. The list was translated to English and then compared to the medical subject heading (MeSH) terms used in the PubMed Browser. RESULTS: Seven hundred six original articles published in the study period used a total of 1163 key words. Matches with MeSH terms were found for 62% (n=46) of the key words in smoking research, 48% (n=52) in asthma, 39% (n=82) in respiratory insufficiency and sleep disorders, 60% (n=49) in diagnostic and treatment techniques, 61% (n=35) in tuberculosis, 65% (n=87) in nontuberculous infections, 61% (n=121) in oncology, 60% (n=37) in circulation, 55% (n=47) in pleural diseases, 48% (n=21) in pathophysiology, and 64% (n=68) in interstitial diseases. We did not see a clear tendency in the evolution of the journal’s key word usage for the knowledge areas analyzed during the study period. The percentage of matching key words held steady around 50% over the last 3 years. CONCLUSIONS: Respiratory system key words in the knowledge areas we investigated are used correctly in *Archivos de Bronconeumología* only about 50% of the time.

Keywords: Bibliographic Search, Bibliometrics, Descriptors, Impact, Journal, Journals, Pubmed, Research

? de Granda Orive, J.I., Río, F.G., Benavent, R.A., Zurían, J.C.V., Ruiz, C.A.J., Reina, S.S., Serrano, S.V. and Arroyo, A.A. (2007), Spanish productivity in smoking research relative to world and European Union productivity from 1999 through 2003, analyzed with the Science Citation Index. *Archivos de Bronconeumología*, **43** (4), 212-218.

Full Text: [2007\Arc Bro43, 212.pdf](2007/Arc%20Bro43,%20212.pdf)

Abstract: Objective. To analyze Spanish scientific productivity from 1999 through 2003 in the area of smoking research, in comparison with world and European Union research, based on data in the Science Citation Index (SCI).

Material and methods. This bibliometric study was carried out by searching the title field of the Science Citation Index Expanded. Descriptive statistics with 95% confidence intervals (CI) were compiled.

Results. Two-hundred ninety-two documents on smoking by Spanish authors were located. The most productive subspecialties were the group comprised of public health, education and health economics with 57 articles, and areas of the respiratory system, experimental research, and internal medicine with 36 articles each. The journals that published the largest number of articles located were *Medicina Clínica,* with 35 articles (12%) and *Archivos de Bronconeumología* with 20 (6.8%). International collaboration was undertaken with institutions in the United States of America and other European Union countries. The mean (SD) number of citations received was 5.12 (8.6) (range, 59-0). Spain contributed 8.34% of the SCI-indexed smoking research overall and 12.85% of SCI-indexed smoking research from the European Union.

Conclusions. Smoking research is developing appropriately in Spain and has high impact, even though output is modest. Factors associated with increased citation are international collaboration, language (being written in English), and having a non-Spanish first author.

Keywords: Bibliometric, Bibliometric Analysis, Bibliometric Study, Bibliometrics, Biomedicine, Citation, Citations, Collaboration, Comparison, Confidence, Confidence Intervals, Databases, Economics, Education, European Union, Experimental, First, Health, Information, Institutions, International, Intervals, Journals, Medicine, Public Health, Research, SCI, Science Citation Index, Scientific Cooperation, Scientific Information, Smoking, Spain, Statistics, System, United States

? Serrano, S.J.V., Orive, J.I.D., Benavent, R.A., Río, F.G., Zurián, J.C.V. and Arroyo, A.A. (2007), Spanish medical center collaboration on smoking research from 1999 through 2003 according to the Science Citation Index. *Archivos de Bronconeumología*, **43** (7), 378-385.

Full Text: [2007\Arc Bro43, 378.pdf](2007/Arc%20Bro43,%20378.pdf)

Abstract: OBJECTIVE: To analyze the network structure of collaboration between medical centers sharing authorship of scientific articles on smoking. MATERIAL AND METHODS: Articles reporting smoking research by authors from 2 or more Spanish medical centers between 1999 and the end of 2003 were identified through the Science Citation Index. The network of collaboration behind the research was analyzed and the most important measures of centrality were compared. To display the data, scientometric maps were constructed using UCINET and NETDRAW network analysis tools. RESULTS: Thirty-five Spanish medical centers (29 hospitals and 6 health care clinics) in 8 autonomous communities were involved in 21 collaborative research projects. Hospital de La Princesa was the network core institution with the highest degrees of nodal (16), closeness (88.66), and betweenness (39) centrality. Other core nodes in the network were the following hospitals: de Cruces, San Pedro de Alcantara, La Paz, Vall d’Hebron, and General Yague. The autonomous communities of Castile and Leon, Madrid, and Catalonia were assigned positions at the core of the intercommunity collaborative network based on coauthorship of scientific papers shared among their medical centers. CONCLUSIONS: Network analysis helps identify the most influential institutions in a scientific community that generates coauthored articles in the field of smoking research. Hospital de la Princesa had the highest measures of centrality. The autonomous communities of Castile and Leon, Madrid, and Catalonia form a highly connected, cohesive subgroup within the network.

Keywords: Authorship, Coauthorship, Collaboration, Networks, Scientific Publications, Smoking, Spain

? Casan, P., Xaubet, A. and Barreiro, F.G.Y.E. (2008), A new cover for the New Year. *Archivos de Bronconeumología*, **44** (12), 655-656

Full Text: [2008\Arc Bro44, 655.pdf](2008/Arc%20Bro44,%20655.pdf)

Keywords: Archivos Archive, Diagnosis, Guidelines, Medicine, Pulmonology, Reference Values, Respiratory-Diseases, Science-Citation-Index, Smoking Research, Thoracic-Surgery Separ

? Ramos, J.M., Masia, M., Padilla, S., Garcia-Pachon, E. and Gutierrez, F. (2009), Spanish scientific research output on tuberculosis indexed in MEDLINE, 1997-2006. *Archivos de Bronconeumología*, **45** (6), 271-278.

Full Text: [2009\Arc Bro45, 271.pdf](2009/Arc%20Bro45,%20271.pdf)

Abstract: Objective: To analyze Spanish scientific research output related to tuberculosis during the 10-year period from 1997 through 2006 and to consider it within the context of European Union (EU) productivity. Material and methods: The bibliometric study was based on a search of the MEDLINE database, using the PubMed search interface. Search terms were tuberculosis or tuberculous appearing in any database field. Results: of 35 735 titles retrieved, 1191 were by Spanish authors. This represented 4.1% of world output. Spain, accounting for 13.5% of EU scientific output in this area, was the third most productive EU country; 610 (51.2%) of the papers were published in English and 581 (48.8%) in Spanish. The number of papers published remained steady over the 10-year period. The first author’s specialty was usually microbiology (225 documents, or 20.6%), followed by internal medicine (154, or 14.1%), and respiratory medicine (117, 10.7%). journals publishing the largest numbers of papers on tuberculosis were Medicina Clinica and Enfermedades Infecciosas y Microbiologia Clinica with 78 (6.5%) each, Anales de Medicina Interna with 72, Revista Clinica Espanola with 64, and *Archivos de Bronconeumología* with 63. The most productive provinces were Madrid and Barcelona, with 272 (22.8%) and 256 (21.5%) papers, respectively. The most productive institutions were hospitals, with 900 titles (75.6%), followed by universities, with 132 (11.1%). Conclusions: Tuberculosis research in Spain has taken place at a steady rate over the last 10 years and has accounted for a substantial proportion of EU research in this field. Half the papers by Spanish authors were found in international journals published outside Spain. The majority of papers were from authors working in hospitals. (C) 2008 SEPAR. Published by Elsevier Espana, S.L. All rights reserved.

Keywords: Areas, Bibliometrics, European-Union, Impact, Medline, Research, Research Output, Science-Citation-Index, Scientific Information, Scientific Research, Spain, Tuberculosis

? Jiménez-Ruiz, C.A. (2009), SEPAR year 2007. A year for smoking prevention and treatment. *Archivos de Bronconeumología*, **45** (11), 561-563.

Full Text: [2009\Arc Bro45, 561.pdf](2009/Arc%20Bro45,%20561.pdf)

Keywords: Cessation Treatment, Obstructive Pulmonary-Disease, Prevalence, Science-Citation-Index, Smokers, Spain, Tobacco Cessation

? González-Alcaide, G., Aleixandre-Benavent, R. and de Grande-Orive, J.I. (2010), A study of the bibliometry and areas of the research groups of *Archivos de Bronconeumología* (2003-2007). *Archivos de Bronconeumología*, **46** (2), 78-84.

Full Text: [2010\Arc Bro46, 78.pdf](2010/Arc%20Bro46,%2078.pdf)

Abstract: Introduction: Scientific cooperation is essential for the advance of biomedical research. Scientists set up informal groups to work together on common issues, who are the main units in the research funding system. Bibliometric and Social Network Analysis methods allow informal groups in scientific papers to be identified and characterised. The objective of the study is to identify research groups in *Archivos de Bronconeumología* between 2003 and 2007 period with the aim of characterizing their scientific collaboration patterns and research areas. Methods: Co-authorships, institutional collaboration relationships and the main research areas of papers published in *Archivos de Bronconeumología* have been identified. Co-authorship networks and institutional collaboration networks have been constructed by using Pajek software tool. Results: A total of 41 research groups involving 171 investigators have been identified. The Collaboration Index for articles was 5.59 and the Transcience Index was 73.11%. There was institutional collaboration in 60.33% of papers. The collaboration between institutions of the saine region prevails (41.03%), followed by collaborations between departments, services or units of the same institution (39.74%), inter-regional collaboration (14.97%) and international collaboration (6.83%). A total of 83.03% of articles were cited. The main research areas covered by groups were chronic obstructive pulmonary disease, asthma, lung neoplasm, bronchogenic carcinoma, smoking and pulmonary embolism. Conclusions: The scientific production of a large number of Respiratory System Spanish research groups is published in *Archivos de Bronconeumología*. A notable collaboration and citation rate has been observed. Nevertheless, it is still essential to encourage inter-regional and international collaboration. (C) 2009 SEPAR. Published by Elsevier Espana, S.L. All rights reserved.

Keywords: Articles, Asthma, Authorship, Awareness Year, Bibliometric, Bibliometrics, Bibliometry, Biomedical Research, Citation, Co-Authorship, Coauthorship, Coauthorship Networks, Collaboration, Community Networks, Cooperative Behaviour, Elsevier, Groups, Impact, Institutional Collaboration, Inter-Institutional Relationships, International Collaboration, Periodicals as Topic, Publications, Pulmonology, Research, Respiratory System, Science-Citation-Index, Scientific Production, Smoking, Smoking Research, Software, Spain, System, Thoracic-Surgery Separ

? de Granda-Orive, J., Alonso-Arroyo, A., Serrano, S.J.V., Aleixandre-Benavent, R., González-Alcaide, G., García-Río, F., Jiménez-Ruiz, C.A., Solano-Reina, S. and Roig-Vázquez, F. (2011), Comparison between two five year periods (1998/2002 and 2003/2007) on the production, impact and co-authorship of publications on tobacco and smoking by Spanish authors using the Science Citation Index. *Archivos de Bronconeumología*, **47** (1), 25-34.

Full Text: [2011\Arc Bro47, 25.pdf](2011/Arc%20Bro47,%2025.pdf)

Abstract: Objective: The aim of this study was to compare the production, impact and co-authorship of publications by Spanish authors on smoking and tobacco between two time periods (1998/2002 vs 2003/2007) using Science Citation Index (SCI). Methods: The literature search was performed in the SCI-Expanded on 20 November 2008. All types of documents by Spanish authors were selected. The search was restricted to the title, and the key words used were “smok\*” and “tobac\*”. The statistical analysis was descriptive (95% CI). Results: A total of 588 documents were obtained, with 399 (67.85%) original papers, 54(9.18%) letters to the editor, and 35 (5.95%) editorials. Productivity increased between the 98/02 to 03/07 periods: 234 (39.8%) documents versus 354 (60.2%). We have found significant differences between the two periods (98/02 vs 03/07) in total mean annual documents (47 +/- 8 vs 71 +/- 16 [p=0.024]) and total mean annual original papers (34 +/- 6 vs 46 +/- 9 [p = 0.041]). The mean number of citations per document was 14.1 +/- 2.1 for 98/02 period and 5.6 +/- 2.5 for 03/07 period (p = 0.003). The co-authorship annual index had increased; with a mean of 6.77 signatures/document for 98/02 period to a mean of 6.87 for 03/07 period. Authors and institution networks collaborations had increased between the two periods. Conclusions: Spanish production and co-authorship of documents on smoking and tobacco have increased between these two periods. The earlier period documents received more citations. (C) 2010 SEPAR. Published by Elsevier Espana, S.L. All rights reserved.

Keywords: Analysis, Authors, Bibliometric Analysis, Citation, Citations, Co-Authorship, Coauthorship, Coauthorship Networks, Collaborations, Cooperation, Impact, Index, Literature, Medline, Networks, Papers, Publications, Rights, SCI, Science, Science Citation Index, Scientific Collaboration, Scientific Publication, Smoking, Spain, Statistical Analysis, Tobacco

# Title: Archivos Espanoles de Urologia

Full Journal Title: Archivos Espanoles de Urologia

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Perez Arbej, J.A., Cameo Rico, M.I., rnaiz Esteban, F., Martinez Perez, E., Nogueras Gimeno, M.A., Espuela Org and Crespo Mayor, V. (1997), Urological publications in the Spanish language: Their impact of journals in the English language. *Archivos Espanoles de Urologia*, **50** (5), 427-432.

Abstract: OBJECTIVE: A study was conducted to analyze the impact of the articles published by Spanish authors in the English language urological journals and those published in Spanish journals in the bibliography referenced in the English language urological literature. METHODS: We randomly analyzed volumes 147,39 and 69 of the Journal of Urology, Urology and the British Journal of Urology, respectively. All articles in the foregoing volumes were reviewed and analyzed as follows: sections, country, no. of references, no. of Spanish publications referenced, no. of references of Spanish publications and the number of Spanish references cited in these. RESULTS: 356 articles were published in the Journal of Urology; of these, 59% were by American and only 6 (1.68%) were by Spanish authors, which ranked 8th according to number. These 6 articles by Spanish authors cited 84 references; of these, only 3 were Spanish publications. Overall, there were 6,708 references (mean 18.8); 6 (0.11%) were articles published by Spanish authors. In Urology, 140 articles were published; of these, 75 % were by American and only one (0.71%) by Spanish authors, which ranked 6th according to number. This article by Spanish authors cited 38 references; of these, only 3 were Spanish publications. Overall, there were 2,055 references (mean 14.6); only 8 (0.38%) were articles published by Spanish authors. In the British Journal of Urology, 177 articles were published; of these, 96 (54.2%) were by British authors and only one (0.56%) by Spanis authors, which ranked 9th according to number. This article by Spanish authors cited 11 references; none of them were Spanish publications. Overall, there were 1,988 references (mean 11.2); 14 (0.7%) were articles published by Spanish authors. CONCLUSION: Spanish authors are not worse off than those of other neighbouring countries in regard to the number of articles published (1.18%) in the three journals analyzed, where most of the articles were chiefly by American or British authors. Spanish publications have no impact in the English-speaking countries, although the number of Spanish publications has been slowly but steadily growing and currently account for 1.21% of the publications worldwide; 41.5% of these are referenced in the Science Citation Index and the Uro-Andrological publications rank 6th (4.2%). Moreover, when Spanish authors are able to publish articles in the English-language journals, they rarely reference Spanish publications. However, in proportion, these have more impact than the Spanish publications. The current trend in the prevalence of the English language in the scientific field is probably the cause of the nonexistent impact outside Spain, where they are hardly read by the Spanish-speaking communities. The foregoing situation is further assisted by the fact that indexing is also done in the English language. Spanish authors are encouraged to increase the number of Spanish publications referenced, particularly those publishing articles in the foreign journals.

Keywords: Bibliography, Country, Field, Impact, Indexing, Journals, Literature, Methods, Prevalence, Publications, Publishing, Rank, Science Citation Index, Spain, Spanish Journals, Trend

# Title: Archivos Latinoamericanos de Nutricion

Full Journal Title: Archivos Latinoamericanos de Nutricion

ISO Abbreviated Title: Arch. Latinoam. Nutr.

JCR Abbreviated Title: Arch Latinoam Nutr

ISSN: 0004-0622

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Publisher: Archivos Latinoamericanos Nutricion

Publisher Address: Apartado 62778 Chacao, Avenida Francisco Miranda, Caracas 1060, Venezuela

Subject Categories:

Nutrition & Dietetics: Impact Factor

? Hernandez, P. and de Garcia, R.R. (1997), Prevalence of Aeromonas s in surface water. *Archivos Latinoamericanos de Nutricion*, **47** (1), 44-46.

Abstract: Some Aeromonas strains are well recognized enteropathogens according to microbiological, clinical, immunological and epidemiological evidence. The main source of infection seems to be untreated water, these microorganisms can be found in virtually all aquatic environments. Additionally, some Aeromonas, which include enterotoxigenic strains, are capable of rapid growth at 5°C and even of producing toxins. Vegetable products irrigated with contaminated water may reach critical Aeromonas levels after being kept under refrigeration, this could represent a public health risk when they are consumed as uncooked salads. This study was pursued to evaluate such risk. Surface water samples were streaked on starch amplicillin and inositol-brilliant green-bile salts agar dishes. In addition, 100 ml of each sample were filtered through a 0.45 µm Millipore membrane filter. The filters were incubated on alkaline peptone water as enrichment media during 24h at 35°C. Enrichment broth was then streaked on the selective agars above mentioned. Isolates from both tests were identified using the API 20 E System. The prevalence of Aeromonas.strains in the analyzed samples was 17, 8%. A higher isolation rate was observed after the enrichment technique. Starch ampicillin agar showed a higher recuperation rate. A. veronii biotype sobria (formerly A. sobria) was isolated with higher frequency. Since this species has been associated with the greatest virulence, the use of contaminated water to irrigate vegetable products that are to be kept under refrigeration and consumed without ulterior cooking may represent a risk to the public health.

? Hernandez, P. and de Garcia, R.R. (1997), Prevalence of Plesiomonas shigelloides in surface water. *Archivos Latinoamericanos de Nutricion*, **47** (1), 47-49.

Abstract: Plesiomonas shigelloides is a Gram negative rod that has been implicated in acute gastroenteritis, meningitis, bacteremia and osteomyelitis. Is normally found in the environment, in fresh water, fish and birds, particularly in tropical and subtropical regions. The present study was pursued with the purpose of establish the role of surface water as reservoir and transmission vehicle and to evaluate the seasonal effect on incidence. Surface water samples were isolated on the surface of two selective agars and simultaneously were concentrated using the Seidler technique, submitted to enrichment procedure in alkaline peptone water and isolated on the surface of the selective agars. Isolates were characterized using biochemical test. The prevalence on analyzed samples was 59% and a higher frequency was observed during the warmer season. The use of this water to irrigate vegetable products that are to be consumed without ulterior cooking may represent a risk to the public health.

# Title: Archivum Immunologiae et Therapiae Experimentalis

Full Journal Title: [Archivum Immunologiae et Therapiae Experimentalis](http://www.springerlink.com/content/120001/?p=636147301b3f4b81beea03053006934c&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0004-069X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Falagas, M.E. and Alexiou, V.G. (2008), The top-ten in journal impact factor manipulation. *Archivum Immunologiae et Therapiae Experimentalis*, **56** (4), 223-226.

Full Text: [2008\Arc Imm The Exp56, 223.pdf](2008/Arc%20Imm%20The%20Exp56,%20223.pdf)

Abstract: A considerable part of the scientific community is, at least to some degree, involved in the “impact factor game”. Editors strive to increase their journals’ impact factor (IF) in order to gain influence in the fields of basic and applied research and scientists seek to profit from the “added value” of publishing in top IF journals. In this article we point out the most common “tricks” of engineering and manipulating the IF undertaken by a portion of professionals of the scientific publishing industry. They attempt to increase the nominator or decrease the denominator of the IF equation by taking advantage of certain design flaws and disadvantages of the IF that permit a degree of artificial and arbitrary inflation. Some of these practices, if not scientifically unethical, are at least questionable and should be abandoned. Editors and publishers should strive for quality through fair and thoughtful selection of papers forwarded for peer review and editorial comments that enhance the quality and scientific accuracy of a manuscript.

Keywords: Citation, Citation, Editorial Policies, Impact Factor, Journals, Research, Research Funding, Scientific Productivity, Scientific Quality, Self-Citation

? Ketcham, C.M. (2008), The proper use of citation data in journal management. *Archivum Immunologiae et Therapiae Experimentalis*, **56** (6), 357-362.

Abstract: Journal impact factors (IF) are often maligned in editorials found in scientific publications, yet citation data can be used appropriately in journal management. The editors of Laboratory Investigation have found that weekly tracking of citation data for this and other highly ranked pathology journals provides valuable feedback on editorial performance and enables us to predict accurate IFs at least six months in advance. Once the IFs are released, it is useful to quantify the contributions of specific article categories, such as reviews and research articles, to the official IFs. In an ongoing attempt to understand the relationship between article downloads and eventual citations, we also analyze the citation rate of papers that had previously been the most frequently accessed on our web site. Finally, as a measure of editorial judgment, the papers that contributed no citations to the journal’s IF are examined as are the papers that were rejected by Laboratory Investigation (Lab. Invest.) but subsequently published elsewhere. Thus the editors of Lab. Invest. use citation data in several ways to measure our progress in elevating the quality of the journal and understand the citation dynamics of papers we publish, while remaining true to the journal’s fundamental operating premise: Publish high-quality original work relating to the mechanisms of disease.

Keywords: Citation, Citations, Disease, Editorial Policy, Feedback, Impact, Impact Factor, Impact Factors, Journal, Journal Impact, Journals, Management, Papers, Pathology, Publications, Research, Scientific Publications, Web of Science

? Baneyx, A. (2008), “Publish or perish” as citation metrics used to analyze scientific output in the humanities: International case studies in economics, geography, social sciences, philosophy, and history. *Archivum Immunologiae et Therapiae Experimentalis*, **56** (6), 363-371.

Full Text: [2008\Arc Imm The Exp56, 363.pdf](2008/Arc%20Imm%20The%20Exp56,%20363.pdf)

Abstract: Traditionally, the most commonly used source of bibliometric data is the Thomson ISI Web of Knowledge, in particular the (Social) Science Citation Index and the Journal Citation Reports, which provide the yearly Journal Impact Factors. This database used for the evaluation of researchers is not advantageous in the humanities, mainly because books, conference papers, and non-English journals, which are an important part of scientific activity, are not (well) covered. This paper presents the use of an alternative source of data, Google Scholar, and its benefits in calculating citation metrics in the humanities. Because of its broader range of data sources, the use of Google Scholar generally results in more comprehensive citation coverage in the humanities. This presentation compares and analyzes some international case studies with ISI Web of Knowledge and Google Scholar. The fields of economics, geography, social sciences, philosophy, and history are focused on to illustrate the differences of results between these two databases. To search for relevant publications in the Google Scholar database, the use of “Publish or Perish” and of CleanPoP, which the author developed to clean the results, are compared.

Keywords: Activity, Alternative, Benefits, Bibliometric, Bibliometrics, Case Studies, Citation, Citation Analysis, Coverage, Data, Database, Databases, Developed, Economics, Evaluation, Geography, Google, Google Scholar, Google-Scholar, History, Humanities, Impact, Index, International, ISI, Journal Citation Reports, Journals, Metrics, Papers, Philosophy, Presentation, Publications, Publish or Perish, Research Evaluation In The Humanities, Science, Science Citation Index, Sciences, Scientific Output, Scopus, Search, Social, Social Sciences, Source, Sources, Web of Science, Web-of-Science

? Glänzel, W., Schubert, A., Thijs, B. and Debackere, K. (2008), A new generation of relational charts for comparative assessment of citation impact. *Archivum Immunologiae et Therapiae Experimentalis*, **56** (6), 373-379.

Full Text: [2008\Arc Imm The Exp56, 373.pdf](2008/Arc%20Imm%20The%20Exp56,%20373.pdf)

Abstract: A common problem in comparative bibliometric studies at the meso and micro level is the differentiation and specialization of research profiles of the objects of analysis at lower levels of aggregation. In this study, institutional profile clusters are used to examine which level of the hierarchical subject classification should preferably be used to build subject-normalized citation indicators. It is shown that a set of properly normalized indicators can serve as a basis of comparative assessment within and even among different clusters, provided that their profiles still overlap and such comparison is thus meaningful. Using the example of 24 European universities, a new version of relational charts is presented for the comparative assessment of citation impact.

Keywords: Aggregation, Analysis, Assessment, Bibliometric, Bibliometric Indicators, Bibliometric Studies, Characteristic Scores, Citation, Citation Analysis, Classification, Comparison, Distributions, Generation, Impact, Index, Indicators, Institutional, Problem, Profiles, Relational Charts, Research, Scales, Science, Scientometric Indicators, Specialization, Subject Normalization, Universities, Version

? Pilc, A. (2008), The use of citation indicators to identify and support high-quality research in Poland. *Archivum Immunologiae et Therapiae Experimentalis*, **56** (6), 381-384.

Full Text: [2008\Arc Imm The Exp56, 381.pdf](2008/Arc%20Imm%20The%20Exp56,%20381.pdf)

Abstract: In large, mostly English-speaking countries, where the “critical mass” of scientists working in different subfields of science is achieved, the peer review system may be sufficient to assess the quality of scientific research. However, in smaller countries, outside the Anglo-American circle, it is important to introduce different systems to identify research of high quality. In Poland, a parametric system for assessing the quality of research has been introduced. It was largely based on the impact factor of scientific journals. While the use of this indicator to assess research quality is highly questionable, the implementation of the system in the Polish reality is even worse. Therefore it is important to change and improve the system currently used by the Ministry of Science and Higher Education to both evaluate and, more importantly, finance science in Poland. Here, a system based on three factors, i.e. the impact factor, the institutional h-index, and the institutional number of citations, is proposed. The scientific quality of institutions in Division VI: Medical Sciences of the Polish Academy of Sciences were evaluated and the results were compared with the existing system. Moreover, a method to identify high-quality researchers and institutions at the national level based on the quantity of highly cited papers is shown. Additionally, an attempt to identify the highest quality Polish research on an international level is proposed. This is based on the number of individual citations, the individual h-index, the number of publications, and the priority of the discovery.

Keywords: Anglo-American, Assessing, Change, Citation, Citation Number, Citations, Discovery, h Index, h-Index, h-Ndex, Impact, Impact Factor, Impact Factor, Implementation, Index, Indicator, Indicators, Institutions, International, Journals, National, Papers, Parametric, Peer, Peer Review, Peer-Review, Publications, Quality, Quality of, Research, Research Quality, Review, Science, Scientific Journals, Scientific Research, Support, Systems

? Pendlebury, D.A. (2009), The use and misuse of journal metrics and other citation indicators. *Archivum Immunologiae et Therapiae Experimentalis*, **57** (1), 1-11.

Full Text: [2009\Arc Imm The Exp57, 1.pdf](2009/Arc%20Imm%20The%20Exp57,%201.pdf)

Abstract: This article reviews the nature and use of the journal impact factor and other common bibliometric measures for assessing research in the sciences and social sciences based on data compiled by Thomson Reuters. Journal impact factors are frequently misused to assess the influence of individual papers and authors, but such uses were never intended. Thomson Reuters also employs other measures of journal influence, which are contrasted with the impact factor. Finally, the author comments on the proper use of citation data in general, often as a supplement to peer review. This review may help government policymakers, university administrators, and individual researchers become better acquainted with the potential benefits and limitations of bibliometrics in the evaluation of research.

Keywords: Administrators, Assessing, Authors, Benefits, Bibliometric, Bibliometric Indicators, Bibliometrics, Citation, Citation Analysis, Comments, Data, Evaluation, Factors, Garfield, General, Government, Impact, Impact Factor, Impact Factors, Impact-Factors, Index, Indicators, Influence, Information, Institute, Journal, Journal Impact, Journal Impact Factor, Journal Influence, Metrics, Misuse, Papers, Peer, Peer Review, Peer-Review, Performance, Potential, Research, Review, Reviews, Science, Sciences, Social, Social Sciences, Subject Categories, Tool, University, Web

? Moed, H.F. (2009), New developments in the use of citation analysis in research evaluation. *Archivum Immunologiae et Therapiae Experimentalis*, **57** (1), 13-18.

Full Text: [2009\Arc Imm The Exp57, 13.pdf](2009/Arc%20Imm%20The%20Exp57,%2013.pdf)

Abstract: This paper presents an overview of research assessment methodologies developed in the field of evaluative bibliometrics, a subfield of quantitative science and technology studies, aimed to construct indicators of research performance from a quantitative statistical analysis of scientific-scholarly documents. Citation analysis is one of its key methodologies. The paper illustrates the potentialities and limitations of the use of bibliometric indicators in research assessment. It discusses the relationship between metrics and peer review; databases used as sources of bibliometric analysis; the pros and cons of indicators often applied, including journal impact factors, Hirsch indices, and normalized indicators of citation impact; and approaches to the bibliometric measurement of institutional research performance.

Keywords: Analysis, Assessment, Bibliometric, Bibliometric Analysis, Bibliometric Indicators, Bibliometrics, Citation, Citation Analysis, Databases, Developed, Evaluation, Factors, Field, Hirsch, Hirsch Index, Impact, Impact Factor, Impact Factors, Index, Indicators, Indices, Institutional, Journal, Journal Impact, Journal Impact Factors, Measurement, Methodologies, Metrics, Output, Peer, Peer Review, Peer-Review, Performance, Relationship, Research, Research Assessment, Research Evaluation, Research Performance, Review, Science, Science And Technology, Science and Technology Studies, Sources, Statistical, Statistical Analysis, Technology

? Adams, J. (2009), The use of bibliometrics to measure research quality in UK higher education institutions. *Archivum Immunologiae et Therapiae Experimentalis*, **57** (1), 19-32.

Full Text: [2009\Arc Imm The Exp57, 19.pdf](2009/Arc%20Imm%20The%20Exp57,%2019.pdf)

Abstract: Research assessment in the UK has evolved over a quarter of a century from a loosely structured, peer-review based process to one with a well understood data portfolio and assessment methodology. After 2008, the assessment process will shift again, to the use of indicators based largely on publication and citation data. These indicators will in part follow the format introduced in 2008, with a profiling of assessment outcomes at national and international levels. However, the shift from peer assessment to a quantitative methodology raises critical issues about which metrics are appropriate and informative and how such metrics should be managed to produce weighting factors for funding formulae. The link between publication metrics and other perceptions of research quality needs to be thoroughly tested and reviewed, and may be variable between disciplines. Many of the indicators that drop out of publication data are poorly linked to quality and should not be used at all. There are also issues about which publications are the correct base for assessment, which staff should be included in a review, how subjects should be structured and how the citation data should be normalised to account for discipline-dependent variables. Finally, it is vital to consider the effect that any assessment process will have on the behaviour of those to be assessed.

Keywords: Assessment, Behaviour, Bibliometrics, Citation, Data, Disciplines, Education, Factors, Funding, Higher Education, Indicators, Institutions, International, Measure, Methodology, Metrics, National, Needs, Outcomes, Peer, Peer Review, Peer-Review, Perceptions, Portfolio, Process, Profiling, Publication, Publications, Quality, Research, Research Quality, Review, UK, Variables, Weighting, Weighting Factors

? Haeffner-Cavaillon, N. and Graillot-Gak, C. (2009), The use of bibliometric indicators to help peer-review assessment. *Archivum Immunologiae et Therapiae Experimentalis*, **57** (1), 33-38.

Full Text: [2009\Arc Imm The Exp57, 33.pdf](2009/Arc%20Imm%20The%20Exp57,%2033.pdf)

Abstract: Inserm is the only French public research institution entirely dedicated to human health. Inserm supports research across the biomedical spectrum in all major disease areas, from fundamental lab-based science to clinical trials. To translate its scientists’ findings into tangible health benefits, Inserm has its own affiliated company, Inserm Transfert, which works with industry. Since 2001, Inserm has been setting up on-line file management software for the evaluation of researchers and laboratories, called EVA (www.eva.inserm.fr). EVA includes all grant applications, assessment reports, evaluation grading evaluation forms and includes automated bibliometric indicator software that enables calculating, for example, the number of publications, journal impact factors, number of citations, citation index, and number of the Top 1% publications for each researcher of the teams. The indicators take into account research fields, the year of publications, and the author’s position among the participants. Bibliometrics is now considered a tool for science policy providing indicators to measure productivity and scientific quality, thereby supplying a basis for evaluating and orienting R&D. It is also a potential tool for evaluation. It is neutral, allows comparative (national and international) assessment, and may select papers in the forefront in all fields. For each team, bibliometric indicators are calculated for all researchers with permanent or long-term positions (3-5 years). The use of bibliometric indicators requires great vigilance, but according to our experience they enrich the committee’s debates without any doubt. We present an analysis of the data of 600 research teams evaluated in 2007-2008.

Keywords: Analysis, Assessment, Benefits, Bibliometric, Bibliometric Indicator, Bibliometric Indicators, Bibliometrics, Biomedical, Citation, Citations, Clinical, Clinical Trials, Company, Data, Disease, Evaluation, Experience, Factors, Forms, French, Grading, Health, Human, Human Health, Impact, Impact Factor, Impact Factor, Impact Factors, Index, Indicator, Indicators, Industry, Institution, International, Journal, Journal Impact, Journal Impact Factors, Long Term, Long-Term, Management, Measure, National, Number of Publications, On-Line, Papers, Peer Review, Peer-Review, Permanent, Policy, Potential, Productivity, Public, Publications, Quality, R&D, Research, Research Performance, Science, Science Policy, Software, Teams, Tool, Vigilance

# Title: Arctic and Alpine Research

Full Journal Title: Arctic and Alpine Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Rouse, W.R. (1991), Impacts of Hudson Bay on the terrestrial climate of the Hudson Bay lowlands. *Arctic and Alpine Research*, **23** (1), 24-30.

Full Text: [1991\Arc Alp Res23, 24.pdf](1991/Arc%20Alp%20Res23,%2024.pdf)

Abstract: Hudson Bay remains frozen or is dominated by ice over the summer solstice and throughout much of the high-sun season. This contributes directly to the winterization of summer. The juxtaposition of the mean summer position of the Arctic front and of treeline to the west of Hudson Bay has been clearly documented, and the coincidence of treeline and the southern boundary of continuous permafrost is well known. The strong southward thrust of the Arctic front in summer is, in major degree, a response to cold air masses spawned over Hudson Bay.

On a mesoscale, Hudson Bay generates onshore winds across a strong temperature and pressure gradient. This mesoscale regime dominates the temperature and surface energy balance for a large distance inland across the Hudson Bay Lowlands. Superimposed on the mesoscale wind field is a land-sea breeze, which is sometimes well developed in coastal areas and which can be traced up to 65 km inland. It is, however, of low frequency occurrence and is usually overridden by the regional wind.

Progressing inland from the coast, in the central Hudson Bay Lowlands, the landscape becomes dominated by deep peat soils and a surface vegetation which is resistant to evapotranspiration. As a result, it is much drier than the wetlands near the coast and evapotranspiration is reduced.

The large-scale cold air masses originating over Hudson Bay and the cold mesoscale winds combine to impose cold air temperatures on the adjacent terrestrial environment. Even with abundant solar radiation and saturated surfaces, evaporation is vigorously suppressed by these cold temperatures. Any warming or cooling during climate change will have a double impact on the terrestrial environment through the strong linkages with Hudson Bay.

Keywords: Sea, Breezes

# Title: Ardeola

Full Journal Title: Ardeola

ISO Abbreviated Title: Ardeola

JCR Abbreviated Title: Ardeola

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Carrascal, L.M. and Diaz, M. (1998), Scientific utility and international diffusion of *Ardeola*: A bibliometric analysis. *Ardeola*, **45** (2), 221-239.

Full Text: 1998\Ardeola45, 221.pdf

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Diffusion, International, Utility

? Bautista, L.M. and Pantoja, J.C. (2000), A bibliometric review of the recent literature in ornithology. *Ardeola*, **47** (1), 109-121.

Full Text: [2000\Ardeola47, 109.pdf](2000/Ardeola47,%20109.pdf)

Keywords: Bibliometric, Literature, Review

? Barbosa, A. and Moreno, E. (2004), A vision of the Spanish ornithology through 50 years of *Ardeola* publication. *Ardeola*, **51** (1), 3-18.

Abstract: Aims: This paper analyses the papers published in Ardeola over the last 50 years with respect to research topics in comparison with the papers published in other ornithological journal such as This and with those of Spanish authors in ornithology published in other journals included in the SCI. Methods: The whole issues published by both Ardeola and Ibis were reviewed. The data base of ISI Web of Science was used to look for papers published in ornithology by Spanish authors as well. Results and Conclusions: The results show an increase in both the number of papers (797) and the number of authors (1,365) publishing in Ardeola over the last 50 years (Fig. 2 and 3). A 13.11% of authors were foreign researchers. The research topics most investigated were biogeography, reproduction, diet/trophic ecology and migration (Fig. 1). The number of papers devoted to biogeography and taxonomy decreased (Fig. 14 and 15), while those devoted to migration (Fig. 16), genetics and pollution did not show any temporal trend. The remaining research topics showed an increase during these 50 years. The comparison with This shows that this journal published more papers than Ardeola. After correction for this factor, more papers were published in Ibis in relation to reproduction (Fig. 5), population dynamics (Fig. 7), morphology (Fig. 10), taxonomy (Fig. 15) and behaviour (Fig. 13). However, more papers were published in Ardeola dealing with biogeography (Fig. 14) and conservation (Fig. 8). The comparison with papers published by Spanish authors in journals covered by ISI shows that Spanish ornithologists preferred Ardeola to publish their papers on migration (Fig. 1). They did not show any preference in relation to publication of studies dealing with habitat selection or diet/trophic ecology, while they preferred to publish the papers of the remaining topics in SCI journals (Fig. 1). The analysis of the preferences of research by avian orders and families shows that paseriforms, charadriforms and raptors focused the attention of Spanish ornithologists (Fig. 17). Within paseriforms, sylvids, corvids, parids, muscicapids, and fringilids were the families most studied (Fig. 18).

Keywords: Analysis, Ardeola, Attention, Authors, Bibliometry, Biology, Bird, Families, Genetics, History of Science, IBIS, ISI, Journal, Journals, Methods, Ornithology, Papers, Population Dynamics, Publication, Publication Bias, Publishing, Reproduction, Research, Research Topics, Researchers, SCI, Science, Sociology of Science, Spain, Topics, Trend, Trends, Web of Science

# Title: Area

Full Journal Title: Area

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Richards, K., Batty, M., Edwards, K., Findlay, A., Foody, G., Frostick, L., Jones, K., Lee, R., Livingstone, D., Marsden, T., Petts, J., Philo, C., Simon, D., Smith, S. and Thomas, D. (2009), The nature of publishing and assessment in Geography and Environmental Studies: Evidence from the Research Assessment Exercise 2008. *Area*, **41** (3), 231-243.

Full Text: [2009\Area41, 231.pdf](2009/Area41,%20231.pdf)

Abstract: We present a summary of the kinds of outputs submitted to the Geography and Environmental Studies sub-panel (H-32) for the 2008 Research Assessment Exercise (RAE), and examine the relationships between the peer assessment of research quality that the RAE process has typified, and alternative modes of assessment based on bibliometrics. This comparison is effected using (in aggregate form) some of the results from the RAE, together with citation data gathered after completion of the RAE assessment, specifically for the purpose of this paper. We conclude that, if it continues to be necessary and desirable to assess, in some measure and however imprecisely, research quality, then peer assessment cannot be replaced by bibliometrics. Bibliometrics permit measurement of something that may be linked to quality but is essentially a different phenomenon - a measure of ‘impact’, for example.

Keywords: Assessment, Bibliometrics, Future, Output Types, Peer Review, Rae, Research

? Schuermans, N., Meeus, B. and De Maesschalck, F. (2010), Is there a world beyond the Web of Science? Publication practices outside the heartland of academic geography. *Area*, **42** (4), 417-424.

Full Text: [2010\Area42, 417.pdf](2010/Area42,%20417.pdf)

Abstract: Because research on the publication practices of academic geographers has been limited to the quantification of journal articles cited in easily searchable databases such as Thomson Reuters’ Web of Science or Elsevier’s Scopus, the question remains whether journals that are not indexed by these databases flourish or perish under the increasing pressure to publish in outlets with the highest impact factors. To answer this question, we have compiled a database with the complete bibliographies of all Belgian professors that have been working in Belgium in the field of human geography over the last 40 years. Based on our quantitative analysis of 810 articles published in 304 different journals, we come to the conclusion that human geographers from the Dutch-speaking north of the country are currently publishing more in English-language journals and in journals indexed by the Web of Science than their colleagues in the seventies or the eighties, but less in the Dutch and the French languages and in Belgian geographical journals. In the French-speaking south of the country, this evolution is less pronounced, but still present. Even though we applaud the tendency to publish in English and in Web of Science journals because it increases the academic rigour of scholarly research, we are afraid that it hampers the role of academic geography in geography education and society as a whole.

Keywords: Academic Publishing, Analysis, Anglo-American Hegemony, Area, Belgium, Bibliometrics, Complete, Database, Databases, Education, English, Field, Globalization, Human Geography, Impact Factors, Journal, Journals, Language, Languages, Place, Pressure, Publication, Publishing, Quantitative Analysis, Research, Science, Scopus, Spaces, USA, Web of Science

? Bajerski, A. (2011), The role of French, German and Spanish journals in scientific communication in international geography. *Area*, **43** (3), 305-313.

Full Text: [2011\Area43, 305.pdf](2011/Area43,%20305.pdf)

Abstract: The majority of research to date on scientific communication in geography has concerned the English-language flow of scientific information in geographic circles, almost entirely ignoring the question of journals published in other languages. The aim of this article is to assess the contribution of French, German and Spanish journals to this flow. The research was based on an analysis of the countries of origin of the authors of articles and authors citing them. Information came from the Scopus database. The analysis shows that French, German and Spanish geographical journals are used almost exclusively for scientific communication within their own country and within their own language. They have an even higher level of ‘closedness’ than the English-language journals published in the Anglo-American countries, so they cannot at present be regarded as international media of scientific communication in geography. A detailed analysis of the research results leads to the conclusion that at present the main barrier to the internationalisation of non-Anglophone geographical journals is probably not the fact that they publish articles in national languages (French, German or Spanish). This situation is explained by two factors. The first is symbolic, while the second is of an organisational and economic nature.

Keywords: Anglo-American, Anglo-American Domination, Authors, Bibliometric Method, Contribution, English, Europe, Europe, Geographical Journals, Globalization, Hegemony, Information, International Geography, Internationalisation, Journals, Language, Praxis, Research, Scientific Communication, Scientific Information, Scopus, Spaces

? Burgoine, T., Hopkins, P., Rech, M.F. and Zapata, G.P. (2011), ‘These kids can’t write abstracts’: Reflections on a postgraduate writing and publishing workshop. *Area*, **43** (4), 463-469.

Full Text: [2011\Area43, 463.pdf](2011/Area43,%20463.pdf)

Abstract: There has been a lack of attention given - in both academic literature and in research training - to providing graduate students with the necessary knowledge and skills to write for publication. The aim of this article is to explore our experiences of participating in a three-day residential postgraduate writing and publishing workshop that was designed to address skills provision in these terms. We reflect upon three specific issues in particular: demystifying the writing and publishing process, being mentored in a multidisciplinary context, and the politics and practices of co-authorship. The benefits of our participation in this workshop included increased confidence in writing, gaining the tools for navigating the publishing process, and personal and professional development as writers and scholars. We conclude by proposing that residential writing and publishing workshops might usefully be made available to a broader range of graduate students.

Keywords: Attention, Author Order, Co-Authorship, Coauthorship, Development, Doctoral Students, Graduate Students, Knowledge, Literature, Outcomes, Politics, Professional, Program, Publication, Publication Ethics, Publishing, Research, Research Training, Residential, Students, Training, UK, Writing

# Title: Arid Land Geography

Full Journal Title: [Arid Land Geography](http://www.ceps.com.tw/ec/ecJnlIntro.aspx?jnlcattype=0&jnlptype=0&jnltype=0&Jnliid=1903&newIssueiid=33056)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? McGill, S. (2010), Plagiarism or imitation? The case of Abronius Silo in Seneca the elder’s *Suasoriae* 2.19-20. *Arethusa*, **43** (1), 113-131.

Full Text: [2010\Arethusa43, 113.pdf](2010/Arethusa43,%20113.pdf)

Keywords: Plagiarism

# Title: Arid Land Geography

Full Journal Title: [Arid Land Geography](http://www.ceps.com.tw/ec/ecJnlIntro.aspx?jnlcattype=0&jnlptype=0&jnltype=0&Jnliid=1903&newIssueiid=33056)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Zhang, A.J. (2006), Analysis of status and trends of the international arid land research. *Arid Land Geography*, **29** (3), 452-456.

Full Text: [2006\Ari Lan Geo29, 452.pdf](2006/Ari%20Lan%20Geo29,%20452.pdf)

Abstract: Using the gray theory, the scientometrical indices based on the articles abstracted from SCI-E database on arid land research were analysed and a gray model was developed to predict the status and trends of the international arid land research. Results show that the various scientometrical indices have significantly increased and will keep the strong growing trend in the following years (2006-2008). USA is the international scientific activity centre of arid land research. Majority of the institutes with higher scientific output index are from the USA. China ranks second in the international scientific output index. The Chinese Academy of Sciences has ranked first for the continuous 8 years in the international institute scientific output index. A series of core supporting disciplines with firm structure and obvious features have formed in the field of the international arid land research.

Keywords: China, Chinese, Database, Field, First, Index, Indices, International, Model, Research, Scientific Output, Structure, Theory, Trend, Trends, USA

# Title: Arid Land Research and Management

Full Journal Title: Arid Land Research and Management

ISO Abbreviated Title: Arid Land Res. Manag.

JCR Abbreviated Title: Arid Land Res Manag

ISSN: 1532-4982

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Taylor & Francis Inc

Publisher Address: 325 Chestnut St, Suite 800, Philadelphia, PA 19106

Subject Categories:

Environmental Sciences: Impact Factor

Agriculture, Soil Science: Impact Factor

? Elkhatib, E.A., Thabet, A.G. and Moharem, K.L. (2001), Sorption of cadmium in surfactant-amended soils. *Arid Land Research and Management*, **15** (4), 385-394.

Abstract: Surfactants can play an important role in controlling metal mobility when added to the soils. Proper selection of type and concentration of surfactant is crucial. The influence of cationic (cetyltrimethylammonium bromide, CTAB) and anionic (sodium dodecyl sulfate, SDS) surfactants on Cd sorption by three soils was studied in laboratory using batch systems. The initial Cd concentrations in solutions ranged from 5 to 160 mg L-1. Surfactants were added to each soil at rates ranging from zero to > 5.3 times the critical micelle concentration (CMC). In general, Cd sorption was found to conform to Freundlich isotherm. The cationic surfactant (CTAB) reduced the amount of Cd sorbed by the soils with the effect increasing from sub-CMC to supra-CMC levels. At the highest surfactant concentration tested (5.3 CMC), the Freundlich coefficient (Kf) values for Cd sorption decreased to 28.7, 61 and 62.9% of the values in the surfactant free soil for clay, calcareous, and sandy soils respectively. The influence of anionic surfactant (SDS) on Cd sorption by soils depended on the concentration of surfactant. Addition of SDS at sub-CMC increased the amount of Cd sorbed by soils studied, but at SDS concentration equivalent to 6.1 CMC, Cd sorption was decreased, Freundlich K-f values decreased from 2.58, 2.05, and 1.86 to 2.19, 1.84, and 1.66 for clay, calcareous, and sandy soils respectively as a result of adding SDS at supra-CMC.

Keywords: Cetyltrimethylammonium Bromide, Sodium Dodecyl Sulfate, Critical Micelle Concentration, Contaminated Soils, Remediation, Adsorption

# Title: Arid Soil Research and Rehabilitation

Full Journal Title: [Arid Soil Research and Rehabilitation](http://web.ebscohost.com/ehost/detail?vid=1&hid=5&sid=d7ebf016-c1da-4fcb-ab23-c56631b54a89%40sessionmgr13&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=a9h&jid=B6P)

ISO Abbreviated Title: Arid Soil Res. Rehabil.

JCR Abbreviated Title: Arid Soil Res Rehab

ISSN: 0890-3069

Issues/Year: 4

Journal Country/Territory: United States

Language: English

Publisher: Taylor & Francis Inc

Publisher Address: 325 Chestnut St, Suite 800, Philadelphia, PA 19106

Subject Categories:

Environmental Sciences: Impact Factor 0.274, 109/126 (1999); Impact Factor 0.379, 105/127 (2000)

Agriculture, Soil Science: Impact Factor 0.379, 22/29 (2000)

? Tomar, N.K. and Gautam, K. (1998), Effect of soil properties on the sorption of orthophosphate and pyrophosphate in some arid and semiarid soils. *Arid Soil Research and Rehabilitation*, **12** (3), 263-273.

Full Text: Ari Soi Res Reh12, 263.pdf

Abstract: The effect of soil properties on the sorption of orthophosphate (OP) and pyrophosphate (PP) was examined on surface (0-0.15 m) soil samples of Camborthids, Torrisamments, and Ustochrepts of arid and semiarid regions of Haryana, India. Subsamples of each soil were equilibrated individually for 24 hours at 25°C with aqueous solutions of KH2PO4 and K4P2O7 containing 0-100 g P m-3, in a 1:20 soil : solution ratio. Percent sorption of added phosphate (X-ad) and distribution coefficients (K-d) progressively decreased with increasing solution P concentration and sorption of phosphate (x). The values of X-ad and K-d for each soil were higher for OP than PP. Phosphate sorption was satisfactorily described by the Freundlich equation (r2 = 0.96-0.99) and the two-surface Langmuir equation (r2 = 0.95-0.99). The contribution of lower energy sites (b(2)) to total sorption maxima ranged from 97.4 to 99.4% in different soils, whereas the values of k(1), (binding energy constant of higher energy sites) were 58- to 598-fold of k(1) (binding energy constant of lower energy sites). The b(1) (sorption capacity of higher energy sites) and b(2) for OP were 1.18- to 2.11-fold and 1.47- to 1.61-fold, respectively, as compared to their corresponding values for PP, whereas k(1) and k(2) were generally lower for OF. The effect of any individual variable soil property, such as clay, CaCO3, organic carbon (OC), clay, OC, and CaCO3, OC, was marked on phosphate solution only on soils not varying in other properties. Nevertheless, the correlations of OC with b(1), b(2), and K, were positive and significant (P = 0.05) owing to the positive correlations of OC with clay and CaCO3. The Freundlich parameter K increased and n decreased with decreases of clay and CaCO3.

Keywords: Adsorption, Calcareous Soils, Calcite, Clay, Distribution Coefficient, Freundlich, Freundlich Equation, Phosphate Sorption, Phosphate Sorption, Sorption, Two Surfaces Langmuir Equation, Two-Surface Langmuir

? Falatah, A.M. and Sheta, A.S. (1999), Influence of dissolved organic carbon and initial moisture on zinc sorption by two arid soils. *Arid Soil Research and Rehabilitation*, **13** (2), 133-144.

Full Text: [1999\Ari Soi Res Reh13, 133.pdf](1999/Ari%20Soi%20Res%20Reh13,%20133.pdf)

Abstract: Sorption of added zinc to irrigated soils in al id regions is an important process that may control the availability of zinc to growing plants. Two soil surface samples varying in clay, organic matter, and calcium carbonate content were selected from central and southwestern regions of Saudi Arabia and prepared in order to give different initial moisture contents ranging from air dried to 100% of field capacity. The sorption experiment was conducted using Zn concentrations ranging from 5 to 25 mg L-1, prepared from ZnSO4 either in distilled water or in solutions containing 75 mg L-1 dissolved organic carbon (DOC). Results indicate that the amount of Zn sorbed in the presence of DOC was relatively high compared with the absence of DOC and Zn retention was strongly affected by the initial soil moisture content. Also, equilibrium Zn concentrations were quite low, while Zn retentions were high in all treatments. Data of Zn sorption were described by the Freundlich isotherm, and two linear portions were found in most cases. In the absence of DOC, retentions of added Zn were controlled by the available exchange sites and/or the precipitation of Zn as sparingly soluble forms. Zn ions in the presence of DOC were able to form soluble-Zn organic complexes that adsorb on the soil surfaces. The Extent of such behavior was related to the variations in clay, organic matter, and calcium carbonate contents as well as the initial moisture of the soil. Results indicate that addition of DOC reduces the amount of extractable Zn from either soil Zn or the sorbed Zn by ammonium bicarbonate diethylenetriamine pentaacetic acid (AB-DTPA). More than 80% of the sorbed Zn was extracted by AB-DTPA, and the percentage of extracted/sorbed Zn decreased with the increase in sorbed Zn. The obtained results give evidence that initial moisture content and addition of DOC reduce the extractability of applied inorganic Zn by AB-DTPA extract in arid soils.

Keywords: Arid Soils, DOC, Soil Moisture, Soil Zn, Zn Sorption, Alkaline Soils, Adsorption, Transport, Copper, Matter, pH

? Mesquita, M.E., Silva, J.M.V.E., Branco, M.A.C. and Sequeira, E.M. (2000), Copper and zinc competitive adsorption: Desorption in calcareous soils. *Arid Soil Research and Rehabilitation*, **14** (1), 27-41.

Full Text: [2000\Ari Soi Res Reh14, 27.pdf](2000/Ari%20Soi%20Res%20Reh14,%2027.pdf)

Abstract: The behavior in competitive adsorption-desorption reactions of Cu and Zn was studied in four calcareous soils. Cu and Zn were added to the soil by Cu, Zn, and Cu + Zn sulfate solutions in a CaSO4 background. Soil sorption of these cations was described by equilibrium isotherms that fitted either Freundlich-or Langmuir-type equations, although Cu desorption data fitted only Freundlich isotherms. Cu and Zn competition was quantified by distribution coefficients, K-d, relating cation distribution between soil and solute and by the competitive Langmuir equation. The competitive Langmuir equation was the better suited to describe the Cu-Zn competitive adsorption in these soils. Distribution coefficients presented lower values when both cations were present, decreasing when the Cu and Zn concentration in solution increased (decreasing soil affinity for these cations), thereby increasing their mobility through the soil. However, the distribution coefficient of specifically adsorbed Cu in equilibrium with cations extracted by a Mg (NO3)2 solution increased with Cu concentration. Cu adsorption was more depressed by Zn than Zn adsorption by Cu. The different behavior of Cu and Zn seems dependent on the percentage Ca (CO3)2 and to a lesser degree, on Cu and Zn organic matter complexes, free IR on content, and surface precipitation on oxides and carbonates.

Keywords: Solute Transport, Metal Adsorption, Sorption, Isotherm, Surfaces, Calcareous Soils, Competitive Equations, Cu-Zn Sorption, Distribution Coefficients, Interaction

# Title: Arkiv for Matematik, Astronomi och Fysik

Full Journal Title: Arkiv for Matematik, Astronomi och Fysik

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Gustafson, B. (1918), Sorption of vapours by charcoal. *Arkiv for Matematik, Astronomi och Fysik*, **7**, 1-17.

Abstract: The sorption at 20 degrees of the vapours of water and acetic acid by charcoal (kind not stated), which had previously been heated, at 400°C and evacuated, has been studied. The amount of sorption occurring at different pressures was determined by measuring the increase in weight of the glass bulb containing the charcoal, the apparatus being so arranged that this bulb could easily be detached. With water-vapour the sorption (ratio of the weight of vapour sorbed to the weight of charcoal taken) is directly proportional to the pressure for pressures up to about 5 mm., that is, the sorption is really solution. Above this pressure the straight-line curve changes to the usual adsorption curve, in all cases the two extrapolated curves cut at a pressure of 7.4 mm. Measurements of the velocity of sorption showed that the vapour is taken up most quickly at low pressures; the velocities are not in accordance with the equation (/b dx///b dt/) = /b k/(X-/b x/), X being the equilibrium quantity of vapour and /b x/ the amount sorbed at time /b t/. Equilibrium is very rapidly obtained by the reduction of pressure on charcoal containing sorbed water-vapour; this “equilibrium from below” has slightly lower values than that “from above.” With acetic acid vapour sorption takes place very rapidly, and the straight-line curve holds only up to 0.8 mm. pressure. The “equilibrium from below” has markedly lower values than that obtained “from above,” there being decided hysteresis, which can be explained as due to the two processes, solid solution and absorption. Charcoal which has not been outgassed at 400°C gives lower equilibrium values than outgassed charcoal, the curves running approximately parallel.

Keywords: Absorption, Adsorption, Equilibrium, Solution, Sorption, Water

# Title: Arkiv för Mineralogi Och Geologi

(Ark. Mineral)

Full Journal Title: Arkiv för Mineralogi Och Geologi

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Szalay, A. (1969), Accumulation of uranium and other micrometals in coal and organic shales and the role of humic acids in these geochemical enrichments. *Arkiv för Mineralogi Och Geologi*, **5**, 23-55.

# Title: The 23rd Army Science Conference (ASC)

Boddu, V.M. and Smith, E.D. (2003), A composite chitosan biosorbent for adsorption of heavy metals from wastewaters. *The 23rd Army Science Conference* (ASC).

Full Text: [A\Arm Sci Con.pdf](A/Arm%20Sci%20Con.pdf)

# Title: Arquivos Brasileiros de Cardiologia

Full Journal Title: [Arquivos Brasileiros de Cardiologia](http://www.scielo.br/scielo.php?script=sci_serial&pid=0066-782X&lng=en&nrm=iso)

ISO Abbreviated Title:

JCR Abbreviated Title: Arq Bras Cardiol

ISSN: 0066-782X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Mansur, A.J., Abud, A.S. and Albuquerque, C.P. (2000), Publication trends in quarterly, bimonthly and monthly cycles of publication during the five decades of Brazilian Archives of Cardiology. *Arquivos Brasileiros de Cardiologia*, **75** (1), 1-7.

Full Text: [2000\Arq Bra Car75, 1.pdf](2000/Arq%20Bra%20Car75,%201.pdf)

Abstract: OBJECTIVE: To study trends in selected manuscript characteristics of articles published in the Brazilian Archives of Cardiology from March 1948, to February 1998, in the quarterly, bimonthly and monthly cycles of publication. METHODS: A random sample of 25% of all issues of the journal comprised the study sample: 13 issues (11.5%) from the quarterly, 27 (23,5%) from the bimonthly, and 58 (65%) from the monthly publication cycle. We studied the type of manuscript, number of authors, geographical distribution, language of publication and references. RESULTS: A total of 1204 articles were studied, 90 (7.5%) from the quarterly, 238 (19,8%) from the bimonthly, and 876 (72.8%) from the monthly publication cycle. The most frequent published articles were original contributions (353), reviews (350) and case reports (205). No significant difference occurred in the proportion of original articles, reviews and case reports; the number of authors was higher in the monthly period;a geographical concentration of the contributions occurred (72% from three Brazilian States); manuscripts in languages other than Portuguese decreased. The mean number of Brazilian references cited was less than 4.7 and the mean number of international references cited was greater than 16.7. CONCLUSION: The analysis of the trends over five decades of publication revealed the need for further steps to be taken by the Brazilian Archives of Cardiology, to meet international publication standards for biomedical journals as well as authors’ and readers’ demands.

Keywords: Analysis, Biomedical, Biomedical Journals, Case Reports, Characteristics, Concentration, Distribution, International, Journal, Journals, Languages, Methods, Publication, Publication Standards, Random Sample, Reviews, Standards, Trends

? Marchini, J.F.M. and Caramelli, B. (2008), Doctorate in Cardiology at FM-USP Heart Institute from 1994 through 2004: Defense and publication. *Arquivos Brasileiros de Cardiologia*, **91** (5), 289-294.

Full Text: [2008\Arq Bra Car91, 289.pdf](2008/Arq%20Bra%20Car91,%20289.pdf)

Abstract: Background: A study evaluated the relationship between the defense of dissertations and their publication within the realm of the entire Medical School of the University of Sao Paulo (FM-USP). The existence of differences among different areas of knowledge and the time between defense of dissertations and their publication is questioned. Objective: To characterize publications related to dissertations defended in graduate courses of the Heart Institute (InCor) of the University of Sao Paulo Medical School (FM-USP). Methods: A retrospective survey was carried out featuring graduate work at FM/USP for the 1994-2004 period. Initially, data were collected on students who defended dissertations during this period, on their advisors, and on the dissertations defended in the course of the period. Then, by crossing these data with data from Medline (R) and Web of Science (R), publications by these authors and data were located that referred to the respective publications. Results: During that period, 268 dissertations were defended, resulting in 195 publications within a period of up to 10 years after their defense. The median time for publication after defense was one year and nine months, with a median impact factor of 2.1, and a median of 4 citations per paper. There was no statistically significant correlation among any of the data studied. Conclusion: A significant percentage of the dissertations were published, and in the group studied, publication took place within increasingly short times after their defense. This fact may be related to the success of the graduate commissions’ policies and to the importance currently lent to debates on this theme, all of which contribute to improvement in the quality of graduate studies. (Arq Bras Cardiol 2008; 91(5) : 289-294).

Keywords: Authors, Citations, Correlation, Course, Crossing, Data, Defense, Education, Graduate, Group, Impact, Impact Factor, Impact Factor, Improvement, Knowledge, Medical Graduate, NOV, Peer Review, Policies, Publication, Publications, Quality, Quality of, Relationship, Research, Science, Students, Success, Survey, Time, Web of Science, Work

? Thomaz, P.C., Assad, R.S. and Moreira, L.F.F. (2011), Using the impact factor and h index to assess researchers and publications. *Arquivos Brasileiros de Cardiologia*, **96** (2), 90-93.

Full Text: [2011\Arq Bra Car96, 90.pdf](2011/Arq%20Bra%20Car96,%2090.pdf)

Keywords: Bibliometric Indicators, Impact, Impact Factor, Performance, Publications

? Barbosa, P.R.B. (2011), Comments on paper by Thomas et al: How to evaluate “quality of publication”. *Arquivos Brasileiros de Cardiologia*, **97** (1), 87.

Full Text: [2011\Arq Bra Car97, 87.pdf](2011/Arq%20Bra%20Car97,%2087.pdf)

Keywords: Bibliometrics, Journal Impact Factor, Scientific and Technical Publications

? Benchimol-Barbosa, P.R., Ribeiro, R.L. and Barbosa, E.C. (2011), Further comments on the paper by Thomas et al: How to evaluate “quality of publication”. *Arquivos Brasileiros de Cardiologia*, **97** (1), 88.

Full Text: [2011\Arq Bra Car97, 88.pdf](2011/Arq%20Bra%20Car97,%2088.pdf)

Keywords: Bibliometrics, Journal Impact Factor, Scientific and Technical Publications

? Oliveira, E.A., Ribeiro, A.L.P., Quirino, I.G., Oliveira, M.C.L., Martelli, D.R., Lima, L.S., Colosimo, E.A., Lopes, T.J., Silva, A.C.S.E. and Martelli, H. (2011), Profile and scientific production of CNPq researchers in cardiology. *Arquivos Brasileiros de Cardiologia*, **97** (3), 186-193.

Full Text: [2011\Arq Bra Car97, 186.pdf](2011/Arq%20Bra%20Car97,%20186.pdf)

Abstract: Background: Systematic assessments of the scientific production can optimize resource allocation and increase research productivity in Brazil. Objective: The aim of this study was to evaluate the profile and scientific production of researchers in the field of Cardiology who have fellowship in Medicine provided by the Conselho Nacional de Desenvolvimento Cientifico e Tecnologico. Methods: The curriculum Lattes of 33 researchers with active fellowships from 2006 to 2008 were included in the analysis. The variables of interest were: gender, affiliation, tutoring of undergraduate, masters and PhD students, and scientific production and its impact. Results: There was predominance of males (72.7%) and of fellowship level 2 (56.4%). Three states of the Federation were responsible for 94% of the researchers: SP (28; 71.8%), RS (4; 10.3%), e RJ (3; 9.1%). Four institutions are responsible for about 82% of researchers: USP (13; 39.4%), UNESP (5; 15.2%), UFRGS (4; 12.1%) e UNIFESP (3; 9.1%). During all academic careers, the researchers published 2.958 journal articles, with a mean of 89 articles per researcher. Of total, 55% and 75% were indexed at Web of Science and Scopus databases, respectively. The researchers received a total of 19648 citations at the database Web of Science, with a median of 330 citations per researcher (IQ = 198-706). The average number of citations per article was 13.5 citations (SD = 11.6). Conclusions: Our study has shown that researchers in the field of cardiology have a relevant scientific production. The knowledge of the profile of researchers in the field of Cardiology will probably enable effective strategies to qualitatively improve the scientific output of Brazilian researchers. (Arq Bras Cardiol 2011; 97(3) : 186-193).

Keywords: Affiliation, Analysis, Bibliometric Indicators, Brazil, Cardiology, Citations, Databases, Education, Gender, Health Sciences, Impact, Impact Factor, Interest, Journal, Knowledge, Medical,Graduate, Methods, Productivity, Profile, Research, Research Productivity, Researchers, Science, Scientific and Technical Publications, Scientific Output, Scientific Production, Scopus, Students, Systematic, Undergraduate, Web of Science

? Moreira, L.F.P. (2011), Brazilian archives of cardiology scientific publication award and the national scientific production in cardiology. *Arquivos Brasileiros de Cardiologia*, **97** (6), 444-445.

Full Text: [2011\Arq Bra Car97, 444.pdf](2011/Arq%20Bra%20Car97,%20444.pdf)

Keywords: Bibliometrics, Cardiology, Cardiomyopathy, Citation Databases, Publication, Scientific and Technical Publications

? Stein, R. and de Araujo, C.G.S. (2011), Heart, exercise and the Brazilian archives of cardiology. *Arquivos Brasileiros de Cardiologia*, **97** (6), 446-448.

Full Text: [2011\Arq Bra Car97, 446.pdf](2011/Arq%20Bra%20Car97,%20446.pdf)

Keywords: Bibliometrics, Cardiology, Exercise, Heart, Publications

# Title: Arquivos Brasileiros de Oftalmologia

Full Journal Title: [Arquivos Brasileiros de Oftalmologia](http://www.scielo.br/scielo.php?script=sci_serial&pid=0004-2749&lng=en&nrm=iso)

ISO Abbreviated Title:

JCR Abbreviated Title: Arq Bras Oftalmol

ISSN: 0004-2749

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Ragghianti, C.P., Martinez, R., Martins, J. and Gallo, J.E. (2006), Comparative study of scientific publications in Ophthalmology and Visual Sciences in Argentina, Brazil, Chile, Paraguay and Uruguay (1995-2004). *Arquivos Brasileiros de Oftalmologia*, **69** (5), 719-723.

Full Text: [2006\Arq Bra Oft69, 719.pdf](2006/Arq%20Bra%20Oft69,%20719.pdf)

Abstract: PURPOSE: The study aimed to measure the scientific production in Ophthalmology and Vision (O&V) in Argentina, Brazil, Chile, Paraguay and Uruguay over a period of 10 years (1995-2004), in order to find out temporal evolution and variations in this field of research. METHODS: PubMed/MEDLINE was used to retrieve records on O&V research literature. The search strategy included keywords, country in the affiliation field and publication date. Data were extracted from each citation and recorded in a spreadsheet. Subsequent analysis focused on type and main topic of publication, journals where articles had been published, and evolution of research done on animals and humans. RESULTS: A total of 1,216 citations were retrieved. Brazil had the largest number of authored publications with an average annual production of 82.4, followed by Argentina with 31.0, Chile 6.4, Uruguay 1.6, and Paraguay 0.2. The ratio of articles on O&V relative to publications involving Health Science ranged from 1.0 to 2.3. The frequency of publications almost tripled from 1995 to 2004. Research on humans showed a significant increase in Argentina and Brazil. CONCLUSIONS: Results provide initial benchmarks on O&V publication rates in countries in South America that may be useful to follow research trends.

Keywords: Affiliation, Analysis, Animals, Argentina, Brazil, Chile, Citation, Citations, Country, Evolution, Field, Humans, Journals, Literature, Methods, Publication, Publications, Pubmed, Purpose, Rates, Records, Research, Scientific Production, Scientific Publications, Search Strategy, South America, Temporal, Trends, Uruguay

# Title: Art History

Full Journal Title: Art History

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Rothstein, B. (2003), The problem with looking at Pieter Bruegel’s Elck. *Art History*, **26** (2), 143-173.

Full Text: [2003\Art His26, 143.pdf](2003/Art%20His26,%20143.pdf)

Abstract: This essay concerns optical wit in Pieter Bruegel’s *Elck* (1558). While scholars have treated this print as an earnest essay in human frailty, I focus instead on its playful negations both of knowledge and of one who would possess it. Building on Peter Parshall’s earlier delineation of this paradoxical theme, I suggest that *Elck* uses a parallelism based in looking to implicate the viewer as one who would obtain a measure of understanding from, or apply it to, the printed image: as the protagonist Elck (Everyone) pores over worldly goods, and as his counterpart Niemant (Nobody) gazes foolishly into a mirror, so does the viewer assess the print. All look, but few -if any -truly see. The implications of this parallelism are crucial. The successful (that is, knowledgeable) interpreter must necessarily cease to exist, as knowledge is, according to the print, the sole province of Nobody; the other option, interpretive failure, associates us with Everyone, who patently lacks any knowledge whatsoever. Bruegel thus cleverly indicts the interpretive skills of his audience by denying the potential for anything but nonsensical reading. I suggest that the print thus disrupts traditional responses to the image and, consequently, calls into question the relationship between artist, object, and observer.

# Title: Arteriosclerosis Thrombosis and Vascular Biology

Full Journal Title: Arteriosclerosis Thrombosis and Vascular Biology

ISO Abbreviated Title: Arterioscler. Thromb. Vasc. Biol.

JCR Abbreviated Title: Arterioscl Throm Vas

ISSN: 1079-5642

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Lippincott Williams & Wilkins

Publisher Address: 530 Walnut St, Philadelphia, PA 19106-3621

Subject Categories:

Hematology Peripheral Vascular Disease: Impact Factor 5.816, / (2001)

Chen, C.J., Chiou, H.Y., Chiang, M.H., Lin, L.J. and Tai, T.Y. (1996), Dose-response relationship between ischemic heart disease mortality and long-term arsenic exposure. *Arteriosclerosis Thrombosis and Vascular Biology*, **16** (4), 504-510.

Abstract: The cardiovascular effects of inorganic arsenic have been documented, but the dose-response relationship between ischemic heart disease (ISHD) and long-term arsenic exposure remains to be elucidated. Mortality rates from ISHD among residents in 60 villages of the area in Taiwan with endemic arseniasis from 1973 through 1986 were analyzed to examine their association with arsenic concentration in drinking water. Based on 1.355 915 person-years and 217 ISHD deaths, the cumulative ISHD mortalities from birth to age 79 years were 3.4%, 3.5%, 4.7%, and 6.6%, respectively, for residents who lived in villages in which the median arsenic concentrations in drinking water were <0.1, 0.1 to 0.34, 0.35 to 0.59, and greater than or equal to 0.6 mg/L. A cohort of 263 patients affected with blackfoot disease (BFD), a unique arsenic-related peripheral vascular disease, and 2293 non-BFD residents in the endemic area of arseniasis were recruited and followed up for an average period of 5.0 years. There was a monotonous biological gradient relationship between cumulative arsenic exposure through drinking artesian well water and ISHD mortality. The relative risks were 2.5, 4.0, and 6.5, respectively, for those who had a cumulative arsenic exposure of 0.1 to 9.9, 10.0 to 19.9, and greater than or equal to 20.0 mg/L-years compared with those without the arsenic exposure after adjustment for age, sex, cigarette smoking, body mass index, serum cholesterol and triglyceride levels, and disease status for hypertension and diabetes through propertional-hazards regression analysis. BFD patients were found to have a significantly higher ISHD mortality than non-BFD residents, showing a multivariate-adjusted relative risk of 2.5 (95% CI, 1.1 to 5.4).

Keywords: Arsenic, Blackfoot Disease, Ischemic Heart Disease, Blackfoot Disease, Drinking-Water, Copper Smelter, Chimney Sweeps, Risk-Factors, Well Water, Cancer

# Title: Arthritis Care & Research

Full Journal Title: Arthritis Care & Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chapple, C.M., Nicholson, H., Baxter, G.D. and Abbott, J.H. (2011), Patient characteristics that predict progression of knee osteoarthritis: A systematic review of prognostic studies. *Arthritis Care & Research*, **63** (8), 1115-1125.

Full Text: [2011\Art Car Res63, 1115.pdf](2011/Art%20Car%20Res63,%201115.pdf)

Abstract: Objective. To identify, by systematic review, patient characteristics that can be used by health care practitioners to predict the likelihood of knee osteoarthritis (OA) progression. Methods. A search was conducted of the electronic databases Medline, EMBASE, CINAHL, AMED, and Web of Science in November 2010. Two reviewers screened articles using inclusion/exclusion criteria. Study participants were adults with established knee OA. Outcome measures for disease progression were change in pain or function or deterioration in radiographic features. Included studies identified clinically relevant prognostic factors at baseline and reported a statistical association with outcome. Minimum followup was 1 year. Articles were assessed for bias, and strength of evidence was summarized for potential predictors of progression. Results. Thirty studies were included, of which 26 were of high quality. Age, yarns knee alignment, presence of OA in multiple joints, and radiographic features had strong evidence as predictors of knee OA progression. Body mass index was a strong predictor for long-term progression (>3 years). Moderate participation in physical activity was not associated with progression. Numerous variables had limited or conflicting evidence. Conclusion. Relatively few predictive variables have strong supporting evidence; numerous variables have limited or conflicting evidence. All variables with strong evidence can be easily evaluated and utilized in clinical practice. Existing knowledge should be developed in future research, particularly in cases where study numbers are low or findings are limited or conflicting. Standardized measurement of potential predictors and outcome measures is recommended.

Keywords: Adults, Age, Articles, Bias, Bone-Scintigraphy, Cartilage Loss, Databases, Disease, Disease Progression, General-Population, Health Care, Hip Osteoarthritis, Joint, Knowledge, Length Inequality, Measurement, Methods, Outcome, Pain, Physical Activity, Practice, Quadriceps Strength, Research, Review, Risk-Factors, Science, Search Strategies, Statistical, Systematic, Systematic Review, Web of Science

# Title: Arthritis Research & Therapy

Full Journal Title: Arthritis Research & Therapy

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ye, L.Y., Kalichman, L., Spittle, A., Dobson, F. and Bennell, K. (2011), Effects of rehabilitative interventions on pain, function and physical impairments in people with hand osteoarthritis: A systematic review. *Arthritis Research & Therapy*, **13** (1), Article Number: R28.

Full Text: [2011\Art Res The13, R28.pdf](2011/Art%20Res%20The13,%20R28.pdf)

Abstract: Introduction: Hand osteoarthritis (OA) is associated with pain, reduced grip strength, loss of range of motion and joint stiffness leading to impaired hand function and difficulty with daily activities. The effectiveness of different rehabilitation interventions on specific treatment goals has not yet been fully explored. The objective of this systematic review is to provide evidence based knowledge on the treatment effects of different rehabilitation interventions for specific treatment goals for hand OA. Methods: A computerized literature search of Medline, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), ISI Web of Science, the Physiotherapy Evidence Database (PEDro) and SCOPUS was performed. Studies that had an evidence level of 2b or higher and that compared a rehabilitation intervention with a control group and assessed at least one of the following outcome measures - pain, physical hand function or other measures of hand impairment were included. The eligibility and methodological quality of trials were systematically assessed by two independent reviewers using the PEDro scale. Treatment effects were calculated using standardized mean difference and 95% confidence intervals. Results: Ten studies, of which six were of higher quality (PEDro score >6), were included. The rehabilitation techniques reviewed included three studies on exercise, two studies each on laser and heat, and one study each on splints, massage and acupuncture. One higher quality trial showed a large positive effect of 12-month use of a night splint on hand pain, function, strength and range of motion. Exercise had no effect on hand pain or function although it may be able to improve hand strength. Low level laser therapy may be useful for improving range of motion. No rehabilitation interventions were found to improve stiffness. Conclusions: There is emerging high quality evidence to support that rehabilitation interventions can offer significant benefits to individuals with hand OA. A summary of the higher quality evidence is provided to assist with clinical decision making based on current evidence. Further high-quality research is needed concerning the effects of rehabilitation interventions on specific treatment goals for hand OA.

Keywords: Activities, Confidence Intervals, Control, Decision Making, Decision-Making, Effectiveness, Exercise, Grip Strength, Health, Intervention, Interventions, ISI, Joint, Knee Osteoarthritis, Knowledge, Literature, Low-Level Laser, Methodological Quality, Methods, Nursing, Outcome, Pain, Pedro Scale, Physiotherapy, Prevalence, Randomized Controlled-Trial, Recommendations, Rehabilitation, Research, Review, Science, Scopus, Systematic, Systematic Review, Therapeutic Trials, Therapy, Thumb, Treatment, Web of Science

# Title: Arthritis and Rheumatism

Full Journal Title: Arthritis and Rheumatism

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0004-3591

Issues/Year:

Journal Country/Territory:

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Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Wolfe, F., Smythe, H.A., Yunus, M.B., Bennett, R.M., Bombardier, C., Goldenberg, D.L., Tugwell, P., Campbell, S.M., Abeles, M., Clark, P., Fam, A.G., Farber, S.J., Fiechtner, J.J., Franklin, C.M., Gatter, R.A., Hamaty, D., Lessard, J., Lichtbroun, A.S., Masi, A.T., Mccain, G.A., Reynolds, W.J., Romano, T.J., Russell, I.J. and Sheon, R.P. (1990), The American college of rheumatology 1990 criteria for the classification of fibromyalgia - Report of the Multicenter Criteria Committee. *Arthritis and Rheumatism*, **33** (2), 160-172.

Full Text: 1990\Art Rhe33, 160.pdf

Abstract: To develop criteria for the classification of fibromyalgia, we studied 558 consecutive patients: 293 patients with fibromyalgia and 265 control patients. Interviews and examinations were performed by trained, blinded assessors. Control patients for the group with primary fibromyalgia were matched for age and sex, and limited to patients with disorders that could be confused with primary fibromyalgia. Control patients for the group with secondary-concomitant fibromyalgia were matched for age, sex, and concomitant rheumatic disorders. Widespread pain (axial plus upper and lower segment plus left- and right-sided pain) was found in 97.6% of all patients with fibromyalgia and in 69.1% of all control patients. The combination of widespread pain and mild or greater tenderness in ⩾ 11 of 18 tender point sites yielded a sensitivity of 88.4% and a specificity of 81.1%. Primary fibromyalgia patients and secondary-concomitant fibromyalgia patients did not differ statistically in any major study variable, and the criteria performed equally well in patients with and those without concomitant rheumatic conditions. The newly proposed criteria for the classification of fibromyalgia are 1) widespread pain in combination with 2) tenderness at 11 or more of the 18 specific tender point sites. No exclusions are made for the presence of concomitant radiographic or laboratory abnormalities. At the diagnostic or classification level, the distinction between primary fibromyalgia and secondary-concomitant fibromyalgia (as defined in the text) is abandoned.

Keywords: Classification, Fibromyalgia

? Sanchez Guerrero, J., Karlson, E.W., Colditz, G.A., Hunter, D.J., Speizer, F.E. and Liang, M.H. (1996), Hair dye use and the risk of developing systemic lupus erythematosus - A cohort study. *Arthritis and Rheumatism*, **39** (4), 657-662.

Abstract: Objective. To investigate the role of hair dye use in the etiology of systemic lupus erythematosus (SLE).

Methods. Participants included 106,391 women enrolled in the Nurses’ Health Study, a prospective cohort study. The subjects were ages 30-55 years in 1976, and were free from SLE and any other connective tissue disease at the time of enrollment. In 1976, 1978, 1980, and 1982, subjects were classified as never-users or ever-users of permanent hair dye, based on self-report, Incidence rates of SLE meeting American College of Rheumatology classification criteria were ascertained and confirmed by chart review.

Results. Compared with never-users of permanent hair dye, the age-adjusted relative risks (RR) for the development of SLE among ever-users (n = 85 cases) was 0.96 (95% confidence interval [95% CI] 0.63-1.47). Duration of hair dye use was not related to risk of SLE. Women with 15 or more years of use had no increased risk (RR = 0.92, 95% CI 0.46-1.83). There was no relationship between frequency of use or time since first use and risk of SLE, The results were similar when less stringent criteria for SLE were used.

Conclusion. We found no evidence that permanent hair dye use, age at first use, frequency of use, or duration of use is associated with the development of SLE.

Keywords: Connective-Tissue Disease, Revised Criteria, Classification, Cancer

# Title: Arthritis & Rheumatism-Arthritis Care & Research

Full Journal Title: Arthritis & Rheumatism-Arthritis Care & Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Gaida, J.E., Ashe, M.C., Bass, S.L. and Cook, J.L. (2009), Is adiposity an under-recognized risk factor for tendinopathy? A systematic review. *Arthritis & Rheumatism-Arthritis Care & Research*, **61** (6), 840-849.

Abstract: Objective. Tendon injuries have been reported to occur more frequently in individuals with increased adiposity. Treatment also appears to have poorer outcomes among these individuals. Our objective was to examine the extent and consistency of associations between adiposity and tendinopathy. Methods. A systematic review of observational studies was conducted. Eight electronic databases were searched (Allied and Complementary Medicine, Biological Abstracts, CINAHL, Current Contents, EMBASE, Medline, SPORTDiscus, and Web of Science) and citation tracking was performed on included reports. Studies were included if they compared adiposity between subjects with and without tendon injury or examined adiposity as a predictor of conservative treatment success. Results. Four longitudinal cohorts, 14 cross-sectional studies, 8 case-control studies, and 2 interventional studies (28 in total) met the inclusion criteria, providing a total of 19,949 individuals. Forty-two subpopulations were identified, 18 of which showed elevated adiposity to be associated with tendon injury (43%). Sensitivity analyses indicated a clustering of positive findings among studies that included clinical patients (81% positive) and among case-control studies (77% positive). Conclusion. Elevated adiposity is frequently associated with tendon injury. Published reports suggest that elevated adiposity is a risk factor for tendon injury, although this association appears to vary depending on aspects of study design and measurement. Adiposity is of particular interest in tendon research because, unlike a number of other reported risk factors for tendon injury, it is somewhat preventable and modifiable. Further research is required to determine if reducing adiposity will reduce the risk of tendon injury or improve the results of treatment.

Keywords: Achilles-Tendon Rupture, Adiposity, Badminton Players, Basketball Players, Case-Control Studies, Citation, Databases, Injury, Interest, Measurement, Medial Epicondylitis, Methods, Observational Studies, Outcomes, Painful Conditions, Patellar Tendinopathy, Repetitive Work, Research, Review, Risk, Risk Factors, Science, Success, Systematic, Systematic Review, Tendinitis, Tendon, Treatment, Upper Extremity, Upper-Limb Disorders, Web of Science

# Title: Arthroscopy-the Journal of Arthroscopic and Related Surgery

Full Journal Title: Arthroscopy-the Journal of Arthroscopic and Related Surgery

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Cheng, T., Liu, T., Zhang, G.Y. and Zhang, X.L. (2011), Computer-navigated surgery in anterior cruciate ligament reconstruction: are radiographic outcomes better than conventional surgery? *Arthroscopy-the Journal of Arthroscopic and Related Surgery*, **27** (1), 97-100.

Abstract: Purpose: The use of computer navigation systems in anterior cruciate ligament (ACL) has been the subject of debate. However, there is a lack of systematic review to analyze the radiographic outcomes after computer-navigated ACL reconstruction. Methods: We searched, in duplicate, Medline, EMBASE, and Web of Science databases for randomized controlled trials (RCTs)/quasi-RCTs comparing conventional versus computer-navigated ACL reconstruction. Two reviewers independently extracted the data. Radiographic outcomes reported in a majority of included trials were meta-analyzed using the Mantel-Haenszel test statistic. Results: After applying our eligibility criteria, we had 5 trials for systematic review and data synthesis. There was no evidence of statistical heterogeneity between all included studies. Both navigated and conventional ACL reconstructions placed the tibial tunnel in acceptable positions. The risk of notch impingement was reduced in the navigated group in comparison with the conventional group. Conclusions: A computer navigation systems may reduce variation from optimal graft alignment and notch impingement. However, there is a need for further high-quality studies with long-term follow-up, so as to prove the clinical significance of these findings. Level of Evidence: Level II, systematic review of randomized controlled trials.

Keywords: Databases, Follow-up, Methods, Outcomes, Placement, Randomized Controlled Trials, Review, Risk, Science, Statistical, Systematic, Systematic Review, Tunnel, Web of Science

# Title: Artificial Cells Blood Substitutes and Immobilization Biotechnology

Full Journal Title: Artificial Cells Blood Substitutes and Immobilization Biotechnology

ISO Abbreviated Title: Artif. Cells Blood Substit. Immobil. Biotechnol.

JCR Abbreviated Title: Artif Cell Blood Sub

ISSN: 1073-1199

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Marcel Dekker Inc

Publisher Address: 270 Madison Ave, New York, NY 10016

Subject Categories:

Engineering, Biomedical: Impact Factor 0.636, / (2001)

Materials Science, Biomaterials: Impact Factor 0.636, / (2001)

? Mobed, M., Eng, M. and Chang, T.M.S. (1996), The importance of standardization of carboxymethylchitin concentration by the dye-binding capacity of alcian blue before adsorption on liposomes. *Artificial Cells Blood Substitutes and Immobilization Biotechnology*, **24** (2), 107-120.

Abstract: A new method based on the measurement of the relative dye-binding capacity of Alcian Blue to carboxymethylchitin (CMC) at various molecular weights (MW) has been developed to facilitate the standardization of the initial polyelectrolyte concentration. In the absence of standardization, non-reproducible adsorption patterns are encountered during the adsorption of the MW CMC on neutral and positively charged liposomes. This method is sensitive down to a concentration of 5 µg/ml of polymer in water. Static Light Scattering (SLS) measurements are used to obtain the weight average molecular weight (M (W)) and the size of the polyelectrolyte (R (g)) and overlap concentrations (c\*). The M (W)s are then used to determine the constants K and a of the Mark-Houwink equation which are 1.65×10-2 dl/g and 0.4701, respectively, evaluated at kappa = 0.154 M, pH = 7.4 and T = 25°C. The critical electrolyte concentration decreases with molecular weight for M (W)s ranging from 5.0×104-1.2×106. The dye-binding capacity changes with the molecular weight distribution of the polyelectrolyte demonstrating the sensitivity of this technique to polydispersity.

Keywords: Quantitative-Determination, Encapsulating Hemoglobin, Chitin, Proteoglycans

? Mashitah, M.D., Zulfadhly, Z. and Bhatia, S. (1999), Binding mechanism of heavy metals biosorption by Pycnoporus sanguineus. *Artificial Cells Blood Substitutes and Immobilization Biotechnology*, **27** (5-6), 441-445.

Abstract: Non-living biomass of Pycnoporus sanguineus has an ability to take up lead,copper and cadmium ions from an aqueous solution. The role played by various functional groups in the cell wall and the mechanism uptake of lead, copper and cadmium by Pycnoporus sanguineus were investigated. Modification of the functional groups such as lipids, carboxylic and amino was done through chemical pretreatment in order to study their role in biosorption of metal ions. Results showed that the chemical modification of these functional groups has modified the ability of biomass to remove lead, copper and cadmium ions fi om the solution. Scanning electron microscopy was also used to study the morphological structure of the biomass before and after adsorption. The electron micrograph indicated that the structure of biomass changed due to the adsorption of the metals onto the cell walls. Furthermore, the X-ray energy dispersion analysis (EDAX) showed that the calcium ion present in the cell wall of biomass was released and replaced by lead ions. This implied that an ion exchange is one of the principal mechanisms for metal biosorption.

Keywords: Adsorption, Binding Mechanisms, Biomass, Biosorption, Cadmium, Copper, Heavy Metals, Metals, Pycnoporus Sanguineus, Rhizopus-Arrhizus

# Title: Artificial Intelligence

Full Journal Title: [Artificial Intelligence](http://www.sciencedirect.com/science?_ob=PublicationURL&_tockey=%23TOC%235617%232011%23998249996%232843745%23FLP%23&_cdi=5617&_pubType=J&_auth=y&_prev=y&_acct=C000051951&_version=1&_urlVersion=0&_userid=7760848&md5=eb30ca0b75d8c303ed28d3ab97feeaf1)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited

? Booker, L.B., Goldberg, D.E. and Holland, J.H. (1989), Classifier systems and genetic algorithms. *Artificial Intelligence*, **40** (1-3), 235-282.

Full Text: [1989\Art Int40, 235.pdf](1989/Art%20Int40,%20235.pdf)

Abstract: Classifier systems are massively parallel, message-passing, rule-based systems that learn through credit assignment (the bucket brigade algorithm) and rule discovery (the genetic algorithm). They typically operate in environments that exhibit one or more of the following characteristics: (1) perpetually novel events accompanied by large amounts of noisy or irrelevant data; (2) continual, often real-time, requirements for action; (3) implicitly or inexactly defined goals; and (4) sparse payoff or reinforcement obtainable only through long action sequences. Classifier systems are designed to absorb new information continuously from such environments, devising sets of competing hypotheses (expressed as rules) without disturbing significantly capabilities already acquired. This paper reviews the definition, theory, and extant applications of classifier systems, comparing them with other machine learning techniques, and closing with a discussion of advantages, problems, and possible extensions of classifier systems.

# Title: Artificial Organs

Full Journal Title: Artificial Organs

ISO Abbreviated Title: Artif. Organs

JCR Abbreviated Title: Artif Organs

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Okonek, S. (1979), Adsorption-kinetics of drugs and pesticides as a function of the adsorbent material. *Artificial Organs*, **3** (4), 396-397.

# Title: Arzneimittel-Forschung-Drug Research

Full Journal Title: Arzneimittel-Forschung-Drug Research

ISO Abbreviated Title: Arzneimittelforschung

JCR Abbreviated Title: Arzneimittel-Forsch

ISSN: 0004-4172

Issues/Year: 15

Journal Country/Territory: Germany

Language: Multi-Language

Publisher: Ecv-Editio Cantor Verlag Medizin Naturwissenschaften

Publisher Address: Bandelstockweg 20, Postfach 1255, D-88322 Aulendorf, Germany

Subject Categories:

Chemistry, Medicinal: Impact Factor 0.748 (2002)

Chemistry, Multidisciplinary: Impact Factor 0.748 (2002)

Pharmacology & Pharmacy: Impact Factor 0.748 (2002)

? Hayashi, K., Takahata, M., Kawamura, Y. and Todo, Y. (2002), Synthesis, antibacterial activity, and toxicity of 7- (isoindolin-5-yl)-4-oxoquinoline-3-carboxylic acids - Discovery of the novel Des-F(6)-quinolone antibacterial agent garenoxacin (T-3811 or BMS-284756). *Arzneimittel-Forschung-Drug Research*, **52** (12), 903-913.

Abstract: The palladium-catalyzed cross-coupling reaction of 5- (tributylstannyl)isoindoline and its 1- and 3-methyl derivatives with 6-fluoro or 6-unsubstituted 7-bromo-1- cyclopropyl-8-methoxy (or difluoromethoxy)-4-oxoquinoline-3- carboxylate afforded the corresponding 1-cyclopropyl-7-(5- isoindolinyl)-4-oxoquinoline-3- carboxylic acids: 6-fluoro, 1a- 7a and 6-nonfluoro, 1b-7b. The in vitro antibacterial spectra of the newly synthesized quinolones were mostly characterized by excellent Gram-positive activity against Staphylococcus aureus and *Streptococcus pneumoniae* including quinolone- resistant strains, and also by significant Gram-negative activity comparable to 7-(1-piperazinyl)fluoroquinolones. Comparative examinations of the in vitro antibacterial profiles and the in vivo toxicity in terms of intravenous lethality, micronuclei-inducing potential and convulsive activity provided 6-nonfluorinated 1-cyclopropyl-8-(difluoromethoxy)7-(1- methylisoindolin-5-yl)-4-oxoquinol-ine-3-carboxylic acid [(+, -)-5b] as the candidate for evaluation of the stereoisomers. The enantiomers (R)-5b and (S)-5b were synthesized via the Suzuki coupling reaction of (R)- and (S)-1-methyl derivatives of 2- (triphenylmethyl)isoindolin-5-boronic acid with the corresponding 7-bromo-8-(difluoromethoxy)-4-oxoquinoline-3- carboxylate. The (R)-5b stereoisomer proved to be 2- to 4-fold more active than the (S)-5b stereoisomer against the organisms tested, with the exception of an equal potency observed with S. pneumoniae IID553 and Haemophilus influenzae ATCC49247. A noticeable in vitro antibacterial profile of (R)-5b was that it is 16- and 64-fold more active than levofloxacin (CAS 100986- 85-4) and ciprofloxacin (CAS 86393-32-0), respectively, against Mycoplasma pneumoniae IID813 (MIC of 0.0313 μg, ml), and 4-fold more active than ciprofloxacin and levofloxacin against *Mycobacterium tuberculosis* M-4 (MIC of 0.0313 μg, ml). Additional studies indicate that (R)-5b (T-3811, CAS 194804-75- 6) exhibits excellent antibacterial activity against a wide range of organisms including anaerobes and common respiratory pathogens, while demonstrating a high selectivity against the mammalian homolog topoisomerases. The methanesulfonate of (R)- 5b (T-3811ME, CAS 223652-90-2) is now undergoing clinical testings

Keywords: 1-Cyclopropyl-7-(Isoindolin-5-Yl)-4-Oxoquinoline-3-Carboxylic Acid Derivatives, 1-Cyclopropyl-8-(Difluoromethoxy)-7-[(1r)-1-Methyl-2,3-Dihydro-1h-Isoindol-5-Yl]-4-Oxo-1,4-Dihydro-3-Quinolinecarboxylic Acid Methanesulfonate, 6- Fluoro and 6-Desfluoro Quinolones, 8-Methoxy and 8-(Difluoromethoxy) Quinolones, Antibacterial Activity, Bms-284756, Cas 194804-75-6, Cas 223652-90-2, Comparison, Cross-Coupling Reactions, Des-Fluoro(6) Quinolone Bms-284756, Fluoroquinolones, Garenoxacin, In Vitro Antibacterial Activity, In Vivo Toxicity, In-Vitro, Invitro, Levofloxacin, Mice, *Mycobacterium tuberculosis*, Organic Electrophiles, Pneumoniae, Resistant, Side-Effect Relationships, Staphylococcus-Aureus, Synthesis, T-3811, Toxicity, Tuberculosis

# Title: Ashrae Journal-American Society of Heating Refrigerating and Air-Conditioning Engineers

Full Journal Title: Ashrae Journal

ISO Abbreviated Title: Ashrae J.

JCR Abbreviated Title: Ashrae J

ISSN: 0001-2491

Issues/Year: 12

Journal Country/Territory: United States

Language: English

Publisher: Amer Soc Heating Refrigerating Air-Conditioning Eng, Inc

Publisher Address: 1791 Tullie Circle Ne, Atlanta, GA 30329

Subject Categories:

Thermodynamics Construction & Building Technology: Impact Factor

Engineering, Mechanical: Impact Factor

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# Title: Asia Pacific Education Review V

Full Journal Title: Asia Pacific Education Review V

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Li, L.X. (2004), China’s Higher Education Reform 1998-2003: A summary. *Asia Pacific Education Review*, **5** (1), 14-22.

Full Text: [2004\Asi Pac Edu Rev5, 14.pdf](2004/Asi%20Pac%20Edu%20Rev5,%2014.pdf)

Abstract: Profoundly important and unprecedented changes have taken place in China’s higher education since 1998, when Zhu Rongji Administration (1998-2003) decided to carry out a new round of educational reform. These changes include some breakthroughs in macro administrative system reform, growth in the total amount of educational expenditure, the enlargement of the recruitment scale of higher education, and positive changes in personnel, reward distribution and rear service reforms. The purpose of this paper is to offer a summary of these reforms. It discusses (1) the internal reasons for the reforms, (2) the main events and measures, (3) the main contents and achievements, (4) and the main problems of these reforms.

Keywords: China, Higher Education, Reform

# Title: Asia-Pacific Journal of Chemical Engineering

Full Journal Title: [Asia-Pacific Journal of Chemical Engineering](http://www3.interscience.wiley.com/cgi-bin/jhome/112760285?CRETRY=1&SRETRY=0)

ISO Abbreviated Title: Asia-Pac. J. Chem. Eng.

JCR Abbreviated Title: Asia-Pac J Chem Eng

ISSN: 1932-2143

Issues/Year: 6

Language: English

Journal Country/Territory: England

Publisher: John Wiley & Sons Inc

Publisher Address: 111 River St, Hoboken, NJ 07030

Subject Categories:

Engineering, Chemical: Impact Factor 0.141, 107/116 (2008); Impact Factor 0.432, 94/128 (2009)

? Oladoja, N.A., Asia, I.O., Ademoroti, C.M.A. and Ogbewe, O.A. (2008), Removal of methylene blue from aqueous solution by rubber (*Hevea brasiliensis*) seed shell in a fixed-bed column. *Asia-Pacific Journal of Chemical Engineering*, **3** (3), 320-332.

Full Text: [2008\Asi-Pac J Che Eng3, 320.pdf](2008/Asi-Pac%20J%20Che%20Eng3,%20320.pdf)

Abstract: The present study investigated the dynamic sorption of methylene blue (MB) from solution using rubber seed shell (RSS) in a fixed-bed column. The process of sorption of MB from solution was analyzed using five different isotherm models (Langmuir, Freundlich, Temkin, Harkins-Jura, and Halsey isotherm equations), and the monolayer sorption capacity (82.64 mg/g) obtained from the Langmuir plot was compared with the bed depth service time (BDST) capacity (703.42 mgA) obtained from the BDST model plot. The effect of two process variables (RSS bed height and initial MB concentration) on the dynamic sorption of MB on RSS was studied using the breakthrough curve. The total time (t,) for the establishment of primary adsorption zone (PAZ), the time required for the movement of the PAZ down the length of the RSS bed (t3), the fractional capacity (f), and the length or depth of PAZ (3) were evaluated. The operating design of the fixed was altered using serial dynamic, sorption study, and the sensitivity of the RSS bed to drought was monitored when the Ci/Cf approached 0.5. The operational parameters of these variations were also estimated. The process variables were correlated with the BDST model, and a linear graph with high linear correlation (R-2 > 0.9) values was obtained (0.9944 and 1.0000 at T-b10 and T-b50 respectively). The results obtained from the correlation of the process variables with the BDST model were used to predict the effect of changing the process variables on the system by using the BDST approach. (C) 2008 Curtin University of Technology and John Wiley & Sons, Ltd.

Keywords: Dynamic, Rubber Seed Shell, Wastewater, Basic Dye, Isotherm, Bed Depth, Domestic Waste-Water, Activated-Carbon, Dye Adsorption, Soil-Clay, Equilibrium, Kinetics, Design, Biosorption, Hydroxide, Adsorbent

? Padmesh, T.V.N., Vijayaraghavan, K., Anand, K. and Velan, M. (2008), Biosorption of basic dyes onto *Azolla filiculoides*: Equilibrium and kinetic modeling. *Asia-Pacific Journal of Chemical Engineering*, **3** (4), 368-373.

Full Text: [2008\Asi-Pac J Che Eng3, 368.pdf](2008/Asi-Pac%20J%20Che%20Eng3,%20368.pdf)

Abstract: The biosorption of basic dyes, rhodamime B (RMB) and methylene blue (MB), using Azolla filiculoides was investigated in a batch reactor and in a fixed-bed column. Biosorption isotherms revealed that pH 5 was the optimum condition for maximum biosorption of both basic dyes. Sorption isotherm data were fitted with Langmuir, Freundlich. Redlich-Peterson and Sips models. A maximum uptake of 166.7 and 91.8 mg/g was observed for MB and RMB, respectively, according to the Langmuir model. It was observed from the kinetic data that the biosorption process using A. filiculoides followed pseudo-second order kinetics. The ability of A. filiculoides to biosorb MB in a packed column was investigted, as well. Experiments conducted at different bed heights (15-25 cm) revealed that decrease in bed height resulted in interior biosorption performance. At 25 cm, the A. filiculoides bed was capable of providing breakthrough at 76.2 h, with column uptake and removal efficiency of 80.2 mg/g and 84.9%, respectively. The Thomas model was successfully used to analyze the experimental data and the model parameters were evaluated. (c) 2008 Curtin University of Technology and John Wiley & Sons, Ltd.

Keywords: Aolla Filiculoides, Nonlinear Isotherms, Kinetics, Biosorption, Packed-Bed Column, Aqueous-Solutions, Adsorption, Removal, Column, Batch

? Babu, P.E.J., Kumar, V. and Visvanathan, R. (2010), Equilibrium and kinetic study for the removal of malachite green using activated carbon prepared from Borassus flabellofer male flower. *Asia-Pacific Journal of Chemical Engineering*, **5** (3), 465-472.

Full Text: 2010\Asi-Pac J Che Eng5, 465.pdf

Abstract: Activated carbon was prepared from dried Borassus flabellofer male flower and batch adsorption experiments were conducted to study its potential to remove malachite green (MG) dye. The process was further optimized by studying the operating variables like initial pH of the stock solution, activation temperature, initial dye concentration, adsorbent loading and contact time. The optimized pH and activation temperatures were found to be 7.55 and 450 °C respectively, where further analysis was made using these optimal variables. Linear, Freundlich and Langmuir isotherms were studied and it was found that the Langmuir isotherms have the highest correlation coefficients compared to the others. Further, the sorption kinetics were analysed using pseudo-first-order and pseudo-second-order kinetic models. The data showed that the second-order equation was the more appropriate, which indicate that the intra-particle diffusion is the rate limiting factor. (c) 2009 Curtin University of Technology and John Wiley & Sons, Ltd.

Keywords: Activated Carbon, Adsorbent, Adsorption, Borassus Flabellofer Male Flower, Bottom Ash, Chitosan, Diffusion, Dye, Dyes, Equilibrium, Isotherms, Kinetic, Kinetic Models, Kinetics, Langmuir, Malachite Green, Sorption, Waste Materials, Water

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Full Text: Asi-Pac J Che Eng5, 563.pdf

Abstract: The surface of barley straw, an agricultural waste, was modified chemically using a cationic surfactant hexadecylpyridinium chloride monohydrate (CPC) and used as an adsorbent for removal of Reactive Blue 4 (RB4) from aqueous solution. The raw and surfactant-modified barley straws (SMBS) were characterized by Fourier transform infrared and elemental analysis. The stability of CPC adsorbed on straw surface was evaluated by exposing to water and organic solvents. The adsorption was performed on removing RB4 from wastewater in a batch adsorption system. The effects of contact time, initial concentration of dye and pH of solution on RB4 uptake were investigated and discussed. It was found that the removal percentage of RB4 increased with the increase in contact time. Adsorption was favorable at acidic condition and the maximum removal of 100% was obtained at pH 3. Dye-loaded SMBS was stable and percentage of desorption was less than 7% in water. The kinetic studies revealed that the kinetic data fitted well to the pseudo-second-order model. The isotherm study also indicated that RB4 adsorption on SMBS matched well with the Langmuir model other than the Freundlich model. The maximum adsorption capacity determined from the Langmuir isotherm was 29.2 mg g-1 at 25ºC (C) 2010 Curtin University of Technology and John Wiley & Sons, Ltd.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Agricultural, Agricultural Waste, Analysis, Aqueous Solution, Batch, Batch Adsorption, Batch Experiment, Biosorption, Capacity, Cationic Surfactant, Chloride, Coconut Coir Pith, Concentration, Data, Desorption, Dye, Equilibrium, Fly-Ash, Freundlich, Freundlich Model, Ions, Isotherm, Kinetic, Kinetic Studies, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Model, Mechanisms, Model, Modified, Modified Barley Straw, Organic, pH, Preparation, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Reactive Blue 4, Reactive Dye, Removal, Si, SMB, Solution, Stability, Straw, Surface, Surfactant, Uptake, Waste, Waste-Water, Wastewater, Water

# Title: Asia Pacific Journal of Clinical Nutrition

Full Journal Title: [Asia Pacific Journal of Clinical Nutrition](http://apjcn.nhri.org.tw/server/APJCN/abstracts.php)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0964-7058

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

? Lee, Y.Y., Tsou, C.S., Lin, H.C., Ien, C.H. and Wu, Y.T. (2008), Global perspective of health related edible plants from the agricultural point of view. *Asia Pacific Journal of Clinical Nutrition*, **17**, 95-98.

Full Text: [2008\Asi Pac J Cli Nut17, 95.pdf](2008/Asi%20Pac%20J%20Cli%20Nut17,%2095.pdf)

Abstract: In knowledge-based economics, nutrition concepts evolve with advances in agriculture. As people around the world become more health conscious, national health becomes one of the main directives for agricultural policies, including that of functional foods and their global markets. This article evaluates the development of the functional food industry in Taiwan and other countries through analysis of R&D capacity and bibliometrics. It attempts to identify future trends in nutrition with technology foresight research. Taiwan has a wide variety of indigenous herbal plants, although its functional food related literature is not large compared with some other Asian countries. However, there are quality papers on the immunologic functions of edible plants Globally there is much interest in edible plants with antioxidant activity and those phyto-nutrients which might help reduce the burden of chronic illness as well as in the nutrigenomics that will lead to the design of foods with these properties. To make the most of available agricultural resources, countries like Taiwan should relate agricultural development to the nutritional status of their populations. This strategy will add significant value to global agriculture.

Keywords: Activity, Advances, Agricultural, Agriculture, Analysis, Antioxidant, Asian, Bibliometrics, Burden, Capacity, Chronic, Chronic Illness, Claims, Consumer, Design, Development, Disease, Economics, Edible Plants, Food, Food Industry, Foods, Foresight, Functional Food, Functions, Global Trend, Health, Illness, Indigenous, Industry, Knowledge-Based, Lead, Literature, Markets, National, Nutrition, Nutritional Status, Papers, Plants, Policies, Populations, Quality, R&D, R&D Capacity, Research, Research Front, Resources, Status, Strategy, Taiwan, Technology, Technology Foresight, Trends, Value, World

# Title: Asia Pacific Journal of Management

Full Journal Title: [Asia Pacific Journal of Management](http://www.springerlink.com/content/106589/?p=6b6c15c145894f6ba0a7acc63c16671a&pi=0)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Tsang, E.W.K. (2006), Economies of scale versus intellectual curiosity. *Asia Pacific Journal of Management*, **23** (2), 157-165.

Full Text: [2006\Asi Pac J Man23, 157.pdf](2006/Asi%20Pac%20J%20Man23,%20157.pdf)

Abstract: Many researchers, especially during the early stage of their career, focus on a narrow topic so as to achieve economies of scale in their research activities. The research path that I have followed during the last ten years or so is, to a significant extent, guided by intellectual curiosity and has led to several distinct streams of research. My own experience shows that this alternative research path can be more intellectually stimulating. It is a worthwhile long-term investment that researchers may like to consider.

Keywords: Economies of Scale, Intellectual Curiosity, Research Strategy, Career Path

# Title: Asia-Pacific Journal of Operational Research

Full Journal Title: [Asia-Pacific Journal of Operational Research](http://web.ebscohost.com/ehost/detail?vid=1&hid=3&sid=552fe02c-c630-461f-95fd-43ea81d43317%40sessionmgr12&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=buh&jid=1QR); [Asia-Pacific Journal of Operational Research](http://econpapers.repec.org/article/wsiapjorx/)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0217-5959

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chang, P.L. and Hsieh, P.N. (2008), Bibliometric overview of operations research/management science research in Asia. *Asia-Pacific Journal of Operational Research*, **25** (2), 217-241.

Full Text: [2008\Asi-Pac J Ope Res25, 217.pdf](2008/Asi-Pac%20J%20Ope%20Res25,%20217.pdf)

Abstract: This paper evaluates the distribution of papers published by Asian authors in Operations Research and Management Science (OR/MS) journals from 1968 to 2006. The impact of OR/MS research in Asia is compared with that of the United States and the World, and research trends are highlighted through an analysis of keywords. From 1968 to 2006, 89,293 papers were published in 60 OR/MS journals. of these, 41.4% came from USA and 16.6% came from seven Asian countries/regions. The contribution of different countries/regions is as follows: Japan 3.7%, Taiwan 3.2%, India 2.3%, Hong Kong 2.2%, South Korea 2.1%, People’s Republic of China (PRC) 1.9%, and Singapore 1.2%. Among all the articles analyzed, 20% have a single author, and 9% have more than three authors; additionally, 22 papers have been cited more than 100 times and 29% have never been cited. Most articles originating in Japan, Taiwan, India, South Korea, PRC, and Singapore are produced in collaboration with local scholars, followed by authors from the United States. Hong Kong is a notable exception, 73% of articles from Hong Kong are produced in cooperation with the PRC, followed by local scholars. The five most productive institutions are as follows: The Indian Institute of Technology, the Korea Advanced Institute of Science and Technology, the National University of Singapore, The Hong Kong Polytechnic University, and the National Chiao-Tung University (Taiwan).

Keywords: Advanced, Algorithm, Analysis, Asia, Asian, Authors, Bibliometric, Bibliometric Analysis, China, Collaboration, Contribution, Cooperation, Distribution, Hong Kong, Impact, India, Indian, Information, Institutions, Japan, Journals, Korea, Local, Management, Management Science, Operations Research, OR, MS, Papers, People’s Republic of China, PRC, Research, Science, Singapore, South Korea, Systems, Taiwan, Time, Trends, United States, USA

# Title: Asia-Pacific Journal of Public Health

Full Journal Title: [Asia-Pacific Journal of Public Health](http://www.scopus.com/scopus/source/sourceInfo.url?sourceId=19598)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1010-5395

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Chiu, W.T., Lin, P.W., Chiou, H.Y., Lee, W.S., Lee, C.N., Yang, Y.Y., Lee, H.M., Hsieh, M.S., Hu, C.J., Ho, Y.S., Deng, W.P. and Hsu, C.Y. (2005), Infrared thermography to mass-screen suspected SARS patients with fever. *Asia-Pacific Journal of Public Health*, **17** (1), 26-28.

Full Text: Asi-Pac J Pub Hea17, 26

Abstract: Fever greater than 38°C is a cardinal sign of patients with the severe acute respiratory syndromes (SARS). To reduce the risk of nosocomial cross infections, screening all patients and visitors who visit hospitals and clinics for fever at the entrance of every hospital building has become a standard protocol in Taiwan during the SARS epidemic from mid-April to mid-June 2003. We used a digital infrared thermal imaging (DITI) system (Telesis Spectrum 9000 MB) to conduct mass screening of patients and visitors who entered the hospital to identify those with fever. The DITI system has two components: a sensor head and a PC imaging workstation. The sensor head is an optic-mechanical device which consists of imagining optics for focusing the infrared source information on the infrared detector. The infrared images are further converted into electrical signals, which are then processed for real-time display on the monitor. During the period from April 13 to May 12 2003, 72,327 outpatients and visitors entered Taipei Medical University-Wan Fang Hospital, Taipei, Taiwan. A total of 305 febrile patients (0.42%) was detected by infrared thermography. Among them, three probable SARS patients were identified after thorough studies including contact history, laboratory tests and radiology examinations. The findings suggests that infrared thermography was an effective and reliable tool ideal for mass-screening patients with fever in the initial phase of screening for SARS patients at a busy hospital which sees approximately 3,000 outpatients every weekday during the SARS epidemic.

? Paraje, G., Sadana, R. and Salmela, R. (2009), Collaboration and “visibility” of health research in the western pacific region. *Asia-Pacific Journal of Public Health*, **21** (2), 128-136.

Full Text: [2009\Asi-Pac J Pub Hea21, 128.pdf](2009/Asi-Pac%20J%20Pub%20Hea21,%20128.pdf)

Abstract: Using more than 3.5 million bibliographic references in Thomson ISI Web of Science (health-related articles, notes, and reviews) and a broad definition of health (covering related social, medical, environmental, and physical sciences) research production, collaboration patterns and “visibility” of that production for largest producers in the Western Pacific Region of the World Health Organization are estimated for the 1992-2001 period. Two findings are of particular interest in relation to the production of relevant knowledge on health topics and equity in the access to this knowledge. The first is that intraregional collaboration is low and that large regional producers of research (ie, Japan, Australia, China, etc) collaborate more with high-income countries from other regions than among themselves within the region, or with smaller regional research producers. The second one is that “visibility” of health research in the region is relatively low, even for high-income countries. High “visibility” research is mostly done with the involvement, through collaboration, of extra-region high-income countries. Collaboration between low-income or middle-income countries is mostly in low “visibility” research.

Keywords: Access, Bibliometrics, Collaboration, Countries, Knowledge, Medical, Research, Research Production, Science, Sciences, Visibility, Web of Science, Western Pacific

? Simkhada, P.P., Baral, Y.R. and van Teijlingen, E.R. (2010), Health and medical research in Nepal: A bibliometric review. *Asia-Pacific Journal of Public Health*, **22** (4), 492-500.

Full Text: [2010\Asi-Pac J Pub Hea22, 492.pdf](2010/Asi-Pac%20J%20Pub%20Hea22,%20492.pdf)

Abstract: This study aimed to quantify the following: (1) health research in academic journals covering Nepal, (2) location of authors, and (3) most prevalent specialties. Published health research conducted in Nepal during 1996 to May 2007 was assessed by searching from 4 electronic databases, and 631 research articles met the inclusion criteria. Only 11% was published in Nepalese journals. Most research covered urban districts. About two thirds of articles had Nepalese authors, but only 41% had a Nepalese first author. Child health and nutrition (11%), maternal health and women’s health (11%), and sexual reproductive health and HIV/AIDS, and family planning (11%) were the most common topics. Most articles (78%) reported quantitative methods. The number of research articles from Nepal is fairly small and concentrated on a limited number of topics and districts. Strategic planning is required to improve the research capacity of Nepal to achieve public health improvements using locally produced evidence.

Keywords: Asia, Author, Bibliometric Review, Collaboration, Countries, Developing Countries, Journals, Nepal, Pacific Region, Public-Health, Research

# Title: Asia Pacific Viewpoint

Full Journal Title: [Asia Pacific Viewpoint](http://www3.interscience.wiley.com/journal/118507094/home)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? McGregor, A. and Murray, W.E. (2009), Challenging placeism in Geography and beyond. *Asia Pacific Viewpoint*, **50** (3), 253-254.

Full Text: [2009\Asi Pac Vie50, 253.pdf](2009/Asi%20Pac%20Vie50,%20253.pdf)

Abstract: Geography’s central concern is place. Ironic, then, that it is characterised by placeist relations of power that permeate both the production and consumption of geographical knowledge. Other disciplines are placeist of course, but none purports to take place as seriously as geography must by definition. There should be no room for placeism in the globalised, democratic, geography that most geographers aspire to. In this short piece we celebrate APV’s inclusion in the Social Science Citation Index (SSCI) but reflect on the inherent spatial bias that confers importance upon such indices and the research assessment exercises that utilise them. On the occasion of the 50(th) anniversary Asia Pacific Viewpoint, we take the opportunity to re-affirm our commitment to non-placeist scholarship which was the founding rationale of the journal.

Keywords: Assessment, Citation, Exercises, Geography, Research, Scholarship, Science Citation Index

# Title: Asian-Australasian Journal of Animal Sciences

Full Journal Title: Asian-Australasian Journal of Animal Sciences

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1011-2367

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Han, I.K. (2002), Publication report of the *Asian-Australasian Journal of Animal Sciences* over its history of 15 years - A review. *Asian-Australasian Journal of Animal Sciences*, **15** (1), 124-144.

Abstract: As an official journal of the *Asian-Australasian Association of Animal Production Societies* (AAAP), the *Asian-Australasian Journal of Animal Sciences* (AJAS) was born in February 1987 and the First issue (Volume 1, Number 1) was published in March 1988 under the Editorship of Professor In K. Han (Korea). By the end of 2001, a total of 84 issues in 14 volumes and 1,761 papers in 11,462 pages had been published. In addition to these 14 volumes, a special issue entitled “Recent Advances in Animal Nutrition” (April, 2000) and 3 supplements entitled “Proceedings of the 9th AAAP Animal Science Congress” (July, 2000) were also published. Publication frequency has steadily increased from 4 issues in 1988, to 6 issues in 1997 and to 12 issues in 2000. The total number of pages per volume and the number of original or review papers published also increased, Sonic significant milestones in the history of the AJAS include that 1 it became a Science Citation Index (SCI) journal in 1997, 2 the impact factor of the journal improved from 0.257 in 1999 to 0.446 in 2000, 3 it became a monthly journal (12 issues per volume) in 2000, 4 it adopted an English editing system in 1999, and 5 it has been covered in “Current Contents/Agriculture, Biology and Environmental Science since 2000. The AJAS is subscribed by 842 individuals or institutions. Annual subscription fees of US$ 50 (Category B) or US$ 70 (Category A) for individuals and US$ 70 (Category B) or USS 120 (Category A) for institutions are much less than the actual production costs of US$ 130. A list of the 1,761 papers published in AJAS, listed according to subject area, may be found in the AJAS homepage (http://www.ajas.snu.ac.kr) and a very well prepared “Editorial Policy with Guide for Authors” is available in the Appendix of this paper. With regard to the submission status of manuscripts from AAAP member countries, India (235), Korea (235) and Japan (198) have submitted the most manuscripts. On the other hand, Mongolia, Nepal, and Papua New Guinea have never submitted any articles. The average time required from submission of a manuscript to printing in the AJAS has been reduced from 11 months in 1997-2000 to 7.8 months in 2001. The average rejection rate of manuscripts was 35.3%, a percentage slightly higher than most leading animal science journals. The total number of scientific papers published in the AJAS by AAAP member countries during a 14-year period (1988-2001) was 1,333 papers (75.7%) and that by non-AAAP member countries was 428 papers (24.3%), Japanese animal scientists have published the largest number of papers (397), followed by Korea (275), India (160), Bangladesh (111), Pakistan (85), Australia (71), Malaysia (59), China (53), Thailand (53), and Indonesia (34). It is regrettable that the Philippines (15), Vietnam (10), New Zealand (8), Nepal (2), Mongolia (0) and Papua New Guinea (0) have not actively participated in publishing papers in the AJAS. It is also interesting to note that the top 5 countries (Bangladesh, India, Japan, Korea and Pakistan) have published 1,028 papers in total indicating 77% of the total papers being published by AAAP animal scientists from Vol. 1 to 14 of the AJAS. The largest number of papers were published in the ruminant nutrition section (591 papers-44.3%), followed by the non-ruminant nutrition section (251 papers-18.8%), the animal reproduction section (153 papers-11.5%) and the animal breeding section (115 papers-8.6%). The largest portion of AJAS manuscripts as reviewed by Korean editors (44.3%), followed by Japanese editors (18.1%), Australian editors (6.0%) and Chinese editors (5.6%).

Editors from the rest of the AAAP member countries have reviewed slightly less than 5% of the total AJAS manuscripts. It was regrettably noticed that editorial members representing Nepal (66.7%), Mongolia (50.0%), India (35.7%), Pakistan (25.0%), Papua New Guinea (25.0%), Malaysia (22.8%) and New Zealand (21.5%) have failed to return many of the manuscripts requested to be reviewed by the Editor-in-Chief. Financial records show that Korea has contributed the largest portion of production costs (68.5%), followed by Japan (17.3%), China (8.3%), and Australia (3.5%). It was found that 6 AAAP member countries have contributed less than 1% of the total production costs (Bangladesh, India, Indonesia, Malaysia, Papua New Guinea and Thailand), and another 6 AAAP member countries (Mongolia, Nepal and Pakistan, Philippine and Vietnam) have never provided any financial contribution in the form of subscriptions, page charges or reprints. It should be pointed out that most AAAP member countries have published more papers than their financial input with the exception of Korea and China. For example, Japan has published 29.8% of the total papers published in AJAS by AAAP member countries. However, Japan has contributed only 17.3% of total income, Similar trends could also be found in the case of Australia, Bangladesh, India, Indonesia, Malaysia and Thailand, A total of 12 Asian young animal scientists (under 40 years of age) have been awarded the AJAS-Purina Outstanding Research Award which was initiated in 1990 with a donation of USS 2,000-3,000 by Mr. K. Y. Kim, President of Agribrands Purina Korea Inc. In order to improve the impact factor (citation frequency) and the Financial structure of the AJAS, 1 submission of more manuscripts of good quality should be encouraged, 2 subscription rate of all AAAP member countries, especially Category B member countries should be dramatically increased, 3 a page charge policy and reprint ordering system should be applied to all AAAP member countries, and 4 all AAAP countries, especially Category A member countries should share more of the financial burden (advertisement revenue or support from public or private sector).

Keywords: AAAP, AJAS, History, Subscribers, Editorial Members, Financial Situation

# Title: Asian Business & Management

Full Journal Title: [Asian Business & Management](http://www.palgrave-journals.com/abm/archive/index.html)

ISO Abbreviated Title:

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ISSN: 1472-4782

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Shapira, P. and Wang, J. (2009), From lab to market? Strategies and issues in the commercialization of nanotechnology in China. *Asian Business & Management*, **8** (4), 461-489.

Full Text: 2009\Asi Bus Man8, 461.pdf

Abstract: Nanotechnology is expected by many to be one of the next drivers of technology-based business and economic growth. China has emerged as a global player in nanotechnology development, and now ranks second (after the United States) in nanotechnology scientific publications produced annually. The study of nanotechnology offers a lens to examine China’s capabilities to move closer to the frontier of technology-led economic development, explore the evolving Chinese innovation system, and assess the effectiveness of policy strategies to modernize and add-value to research and industry in China. Supported by new policy initiatives and funding, hundreds of institutions and thousands of researchers in China are engaged in nanotechnology R&D. Yet, although Chinese nanotechnology research has scale, the pathways from laboratory research to successful commercialization remain problematic. Chinese performance in nanotechnology patenting and product development is weak relative to its research strength, suggesting a significant gap between the research base and industrial development. Drawing on bibliometric research and field interviews with Chinese nanotechnology policymakers, researchers and business representatives, we analyze this gap, explore the factors contributing to it and assess future commercialization trajectories. Asian Business & Management (2009) 8, 461-489. doi: 10.1057/abm.2009.15.

Keywords: China, Commercialization, FDI, Firms, Industrial Innovation, Innovation, Nanoscience, Nanotechnology, Publications, R&D, Research, Science, Spillover, Technology Transfer, Technology-Transfer

# Title: Asian Journal of Chemistry

Full Journal Title: [Asian Journal of Chemistry](http://www.asianjournalofchemistry.co.in/)

ISO Abbrev. Title: Asian J. Chem.

JCR Abbrev. Title: Asian J Chem

ISSN: 0970-7077

Issues/Year: 6

Language: English

Journal Country/Territory: India

Publisher: Asian Journal of Chemistry

Publisher Address: 11/100 Rajendra Nagar, Sector 3, Sahibabad 201 005, Ghaziabad, India

Subject Categories:

Chemistry, Multidisciplinary: Impact Factor 0.213, 128/140 (2009); Impact Factor 0.247, 134/144 (2010)

? Vardia, J., Intodia, K., Khaturia, B.C. and Bhat, C.V. (1996), Ion exchange kinetics of α-, β- and γ-picolines: Thermodynamic parameters. *Asian Journal of Chemistry*, **8** (4), 743-750.

Full Text: 1996\Asi J Che8, 743.pdf

Abstract: The study of ion exchange and sorption equilibria is of great importance to study the ion exchange resin solute solvent systems. Kinetic study of a system is generally undertaken to know the mechanism of the process, to determine the rate controlling step and to calculate the thermodynamic parameters. This study reports the uptake of alpha-, beta- and gamma-picolines by strongly acidic cation exchange resin, Dowex 50 WX8 (-20, +50) in H+ form from aqueous methanolic media of different composition. The variables studied are the rate of stirring, temperature and solvent medium. The study shows that the systems obey the first order rate laws with respect to alpha-, beta- and gamma-picolines. This paper also reports the thermodynamic parameters: the apparent energy of activation Delta E, the entropy of activation Delta S and the free energy of activation Delta G, for different systems studied.

Keywords: Activation, Cation Exchange, Exchange, Ion Exchange, Ion Exchange Kinetics, Kinetic, Kinetics, Resin, Sorption, System, Temperature, Thermodynamic, Thermodynamic Parameters, Uptake

? Bansal, R.C. and Randhawa, B.K. (1996), Adsorption of phenyl thiourea by active carbons. *Asian Journal of Chemistry*, **8** (1), 105-109.

Full Text: 1996\Asi J Che8, 105.pdf

Abstract: The adsorption of phenyl thiourea has been studied on different activated carbons. The adsorption isotherms show a steep rise-in adsorption at tower i concentrations and reaching a limiting value at higher concentrations. The maximum amount of phenyl thiourea adsorbed shows a linear relationship; with the surface area.

Keywords: Adsorption, Adsorption Isotherms, Isotherms, Surface, Surface Area

? Jahagirdar, D.V. and Nigal, J.N. (1997), Adsorption of Cd2+ and Pb2+ on agricultural byproducts. *Asian Journal of Chemistry*, **9** (1), 122-125.

Full Text: [1997\Asi J Che9, 122.PDF](1997/Asi%20J%20Che9,%20122.PDF)

Abstract: Adsorption of toxic metal ions like Cd2+ and Pb2+ on different vegetable and agricultural byproducts were measured at room temperature by atomic absorption spectrophotometric (AAS) and differential pulse polarography (DPP) methods. The adsorption of Cd2+ follows the order polymerised onion skin > bagasse > banana husk > suffola husk > spinach; whereas the adsorption of Pb2+ follows the order polymerised onion skin > spinach > suffolahusk > bagasse > banana husk. Polymerised onion skin shows maximum adsorbing capacity for both the ions compared to other adsorbents. The adsorption due to raw onion skin is almost equal to polymerised onion skin. Therefore it can be suggested that raw onion skin is a better substitute for polymerised onion skin. Also the raw onion skin would be a more inexpensive adsorbent than the one modified by a polymer.

Keywords: AAS, Absorption, Adsorbent, Adsorbents, Adsorption, Agricultural Byproducts, Binding, Capacity, Differential Pulse Polarography, Metal Ions, Pb2+, Peanut Skins, Polarography, Polymer, Removal, Skin, Temperature, Toxic, Toxic Metal Ions

? Sujana, M.G., Thakur, R.S., Das, S.N. and Rao, S.B. (1997), Defluorination of waste waters. *Asian Journal of Chemistry*, **9** (4), 561-570

Full Text: 1997\Asi J Che9, 561.pdf

Keywords: Adsorption, Charcoal, Defluoridation, Fluoride

? Balasubramanian, N., Raja, R.E., Lalitha, K. and Prebha, S. (1998), Adsorption dynamics: Comparison of adsorption potentials of fibrous keratinous materials, viz., human black and white hairs. *Asian Journal of Chemistry*, **10** (1), 136-145.

Full Text: [1998\Asi J Che10, 136.PDF](1998/Asi%20J%20Che10,%20136.PDF)

Abstract: Industries, such as tanneries, textile mills and chromium plating industries discharge effluents containing chromium and they generate serious disorders and diseases. Several methods of removal, such as precipitation, reverse osmosis and ion-exchange were known, bur they involve high capital investments. Hence, adsorption method was chosen using human black and white hairs as adsorbents by the authors. Batch-type experiments were conducted. Contact time for attaining equilibrium and pH suitable for study were found to be 4 h and 1.5 respectively, The equilibrium data are analysed in the light of Langmuir and Freundlich isotherm models and a comparative study is made with a view to exploring the adsorption potentials of these two keratinous adsorbents.

Keywords: Aqueous-Solutions, Fly-Ash, Removal, Microorganisms, Toxicity, Clay

? Bajpai, S.K. (1999), Effect of temperature on removal of Ni(II) from aqueous solutions by adsorption onto fire clay. *Asian Journal of Chemistry*, **11** (1), 171-180.

Full Text: [1999\Asi J Che11, 171.PDF](1999/Asi%20J%20Che11,%20171.PDF)

Abstract: The removal of Ni(II) from aqueous solutions by adsorption on fire clay has been studied as a function of temperature. The amount of Ni(II) removed is highly dependent on temperature and favours high temperature; thus showing endothermic nature of the process. Also the initial concentration of adsorbate affects the extent of adsorption significantly. The various rate parameters of the adsorption process have been determined at different temperatures. Activation energy of the process was found to be 34.59 kJ mol-1. The uptake of Ni(II) exhibited Langmuir type adsorption behaviour which was also confirmed by regression: analysis. The various thermodynamic parameters have been calculated to reflect the nature of the adsorption process.

Keywords: Activated Carbon, Activation, Activation Energy, Adsorbents, Adsorption, Analysis, Aqueous Solutions, Clay, Dye, Effect of Temperature, Heavy-Metal Cations, High Temperature, Langmuir, Ni(II), Removal, Temperature, Thermodynamic, Thermodynamic Parameters, Uptake

? Shukla, R.J. and Singh, A. (1999), Adsorption of malachite green on to combination of chitin, activated charcoal and alumina. *Asian Journal of Chemistry*, **11** (1), 259-260.

Full Text: [1999\Asi J Che11, 259.PDF](1999/Asi%20J%20Che11,%20259.PDF)

Abstract: Adsorption of malachite green, an acid dye used for silk dying, on to combination of chitin, activated charocal and alumina has been found to depend on contact time, concentration, temperature and pH. The experimental data has been correlated with Langmuir’s adsorption isotherm.

Keywords: Activated Charcoal, Adsorption, Adsorption Isotherm, Alumina, Charcoal, Chitin, Contact Time, Dye, Isotherm, Malachite Green, pH, Temperature

? Jaiswal, M. and Maheshwari, A. (1999), Removal of cresols by adsorption on plastic clay. *Asian Journal of Chemistry*, **11** (2), 495-498.

Full Text: 1999\Asi J Che11, 495.pdf

Abstract: The adsorption of cresols (ortho, meta and para) on plastic clay has been investigated by means of a batch technique from their aqueous solutions. The effects of particle size and initial solute concentration have been studied and isotherm parameters are evaluated. The Freundlich Isotherm has been found to be more suitable for all the systems studied. Plastic clay is characterized with different analyses and has been found that silica and alumina are its major constituents responsible for adsorption. Thermodynamic parameters are calculated.

Keywords: Adsorption, Alumina, Aqueous Solutions, Batch, Batch Technique, Clay, Freundlich, Isotherm, Plastic Clay, Removal, Silica, Thermodynamic, Thermodynamic Parameters

? Jaiswal, M.M. and Maheshwari, M.A. (1999), Removal of sulfur from kerosene oil by adsorption on plastic clay. *Asian Journal of Chemistry*, **11** (3), 858-861.

Full Text: 1999\Asi J Che11, 858.pdf

Abstract: The removal of mercaptan sulfur from kerosene-oil by adsorption on plastic clay at different temperatures has been studied. The extent of adsorption of sulfur From kerosene-oil on plastic clay increases from 87.0 to 94.0%, with the increase of temperature from 303 to 323 K respectively. The Langmuir isotherm can be used to represent the equilibrium data at various temperatures. The process of adsorption is endothermic.

Keywords: Adsorption, Clay, Equilibrium, Isotherm, Kerosene, Langmuir, Langmuir Isotherm, Plastic Clay, Removal, Temperature

? Bala, P., Bhardwaj, S.S. and Sidhu, P.S. (1999), Kinetics of phosphate adsorption by alluvial soils at different temperatures. *Asian Journal of Chemistry*, **11** (3), 996-1000.

Full Text: 1999\Asi J Che11, 996.pdf

Abstract: The kinetics of phosphate adsorption by alluvium derived soils was studied and data obtained were used to calculate various kinetic and thermodynamic parameters. The kinetics of phosphate adsorption could be described by second order reaction. For a particular time interval, the amount of phosphate adsorbed increased with increase in temperature indicating endothermic nature of phosphate adsorption process.

Keywords: Adsorption, Kinetic, Kinetics, Soils, Temperature, Thermodynamic, Thermodynamic Parameters

? Ahamed, A.J. and Balasubramanian, N. (1999), Characterization and exploration of lignite for the adsorption of lead(II) ions. *Asian Journal of Chemistry*, **11** (3), 1087-1088.

Full Text: [1999\Asi J Che11, 1087.PDF](1999/Asi%20J%20Che11,%201087.PDF)

Abstract: The adsorbent lignite was subjected to proximate analysis and the various parameters were reported. It was used for the successful adsorption of lead(II) species from wastewaters.

? Bala, P., Bhardwaj, S.S. and Sidhu, P.S. (2000), Effect of electrolyte pH on phosphate adsorption by soils. *Asian Journal of Chemistry*, **12** (2), 394-398.

Full Text: 2000\Asi J Che12, 394.pdf

Abstract: Effect of pH on phosphate adsorption by different soils was studied by varying the pH of supporting electrolytes NaCl and CaCl2. Variation in pH of NaCl did not markedly affect phosphate adsorption in all the soils. On the other hand, it decreased with pH from 4 to 6 and abruptly increased above pH 7.0 when CaCl2 was used as supporting electrolyte.

Keywords: Adsorption, Effect of Ph, Nacl, pH, Soils, Sorption, Southern Nigeria, Supporting Electrolyte

? Jose, V.B., Sugumar, R.S. and Gopalan, R. (2000), Removal of dyestuffs from aqueous solutions using maize cob. *Asian Journal of Chemistry*, **12** (3), 668-674.

Full Text: [2000\Asi J Che12, 668.PDF](2000/Asi%20J%20Che12,%20668.PDF)

Abstract: The adsorption of the dyes, malachite green, congo red and methyl red onto maize cob, an agricultural waste, was studied. Isotherm studies were carried out to find out the maximum adsorption capacity of maize cob for the dyestuffs. Adsorption was found to follow Freundlich isotherm model. Contact-time experiments were carried out in an agitated batch adsorber to assess the effect of temperature and maize cob particle size on adsorption.

Keywords: Adsorption

? Arora, H., Bhardwaj, S.S. and Sharma, B.D. (2000), Studies on adsorption of manganese by soils in the presence of electrolyte (Na2SO4). *Asian Journal of Chemistry*, **12** (3), 837-842.

Full Text: 2000\Asi J Che12, 837.pdf

Abstract: Adsorption of manganese in the presence of Na2SO4 has been studied on nine soil samples from Punjab (S-1 to S-6) and Himachal Pradesh (S-7 to S-9) at 25 degrees and 35 degrees C Adsorption of manganese increases with increase in concentration of adsorbate; adsorption isotherms being L-shaped. The adsorption of manganese decreases with increase in temperature. The averaged values of partial molar free enegy change (Delta (G) over bar) and apparent heats of adsorption Delta H have been calculated. The data conform to the Freundlich and the Langmuir equations.

Keywords: Adsorption, Adsorption Isotherms, Freundlich, Isotherms, Langmuir, Mn, Punjab, Soil, Soils, Temperature

? Zaggout, F.R. (2001), Removal of copper from water by decaying Tamrix gallica leaves. *Asian Journal of Chemistry*, **13** (2), 639-650.

Full Text: [2001\Asi J Che13, 639.PDF](2001/Asi%20J%20Che13,%20639.PDF)

Abstract: Uptake of copper from aqueous solution by Tamrix gallica leaves has been studied. The effect of several factors on both rate and amount of this uptake has been investigated. These factors include concentration of copper, concentration of leaves, pH, competing ions, drying leaves and grinding leaves.

The pattern of curves showing the loss of copper from solution has been explained. Applicability of the Freundlich adsorption isotherm on the present results has been examined and the parameters of this isotherm have been calculated. The order of reaction between copper ion and Tamrix gallica leaves has been determined and a mechanism for this reaction has been suggested.

Keywords: Metal-Ions, Aluminum

? Prasad, K. and Sharma, H.K. (2001), Adsorption behaviour of clarified sugarcane juice. *Asian Journal of Chemistry*, **13** (3), 1055-1058.

Full Text: 2001\Asi J Che13, 1055.pdf

Abstract: Colouring substances in sugarcane juice are undesirable impurities and are classed as non-sugar impurities. The present paper deals with the purification of colouring impurities through the adsorption process using activated charcoal as an adsorbent. The study indicates that an effective purification of CSJ (clarified sugarcane juice) can be obtained at a concentration of 0.04 g carbon/g CSJ for 25 min carbon-CSJ contact time at an ambient temperature (30 + 2 degreesC) in purification process.

Keywords: Activated Charcoal, Adsorbent, Adsorption, Charcoal, Concentrate, Contact Time, Sugarcane, Temperature

? Soylak, M., Narin, I., Elci, L. and Dogan, M. (2001), Determination of copper, cobalt, cadmium, lead, nickel and chromium by atomic absorption spectrometry in bottled mineral water from Turkey after preconcentration/separation in activated carbon. *Asian Journal of Chemistry*, **13** (3), 1097-1100.

Full Text: [2001\Asi J Che13, 1097.PDF](2001/Asi%20J%20Che13,%201097.PDF)

Abstract: Copper, cobalt, cadmium, lead, nickel and chromium concentrations were determined in some bottled mineral water samples purchased from local markets in Nigde and Kayseri-Turkey by atomic absorption spectrometry after preconcentration/separation procedure on the activated carbon column as pyrocatechol violet complexes. The concentration ranges of copper, cobalt, chromium, lead and nickel were found to be as 10.3-37.4 µg/L, 2.0-2.3 µg/L, 2.0-4.6 µg/L, 2.0-3.4 µg/L 4.7-16.7 µg/L respectively. The cadmium concentrations of all the samples were found to be below 0.1 µg/L.

Keywords: Solid-Phase Extraction, Trace-Metal Ions, Online Preconcentration, Samples, Column, Enrichment, Elements, Complex, Fiber, AAS

? Farooqui, M. and Kotharkar, S. (2001), Removal of chromium(VI) from electroplating effluent by leaves of cauliflower. *Asian Journal of Chemistry*, **13** (3), 1237-1239.

Full Text: 2001\Asi J Che13, 1237.pdf

Abstract: The paper described the use of leaves of cauliflower for the removal of Cr(VI) from industrial waste stream. The dried and powdered raw materials were used for the removal of waste water. It is observed that at room temperature leaves of cauliflower show maximum adsorption property. As the pH increases the adsorption property decreases of the effluent.

Keywords: Adsorption, Chromium(VI), Cr(VI), Effluent, Electroplating Effluent, Industrial, Industrial Waste, pH, Removal, Temperature, Waste Water, Water

? Singh, S. and Yenkie, M.K.N. (2001), Adsorption of o-cresol from its aqueous solution on granular activated carbon columns. *Asian Journal of Chemistry*, **13** (4), 1349-1362.

Full Text: 2001\Asi J Che13, 1349.pdf

Abstract: Compliance with stringent discharge limits and the most economic way of achieving it without loss of production has led to continued refinement of existing treatment technologies and the recognition and development of promising emergent technologies. Adsorption on granular activated carbon (GAC) has proved itself as an efficient technology for removal of final traces of a broad spectrum of toxic organic compounds from domestic and industrial wastewaters. In the present investigation, experiments have been carried out to determine the effect of various physico-chemical parameters associated with both adsorbent and adsorbate on the adsorption of o-cresol from aqueous phase. Some design parameters such as bed height, adsorbate flow rate, temperature, initial adsorbate concentration and adsorbate pH for efficient designing of fixed bed GAC columns has also been investigated. The commercially available bituminous coal based granular activated carbon Filtrasorb-300 (F 300) was used as adsorbent. The validity of the Michael’s mass tranfer zone (MTZ) concept for designing adsorption columns was used in this work.

Keywords: Activated Carbon, Adsorbent, Adsorption, Carbon, Compounds, Design, Development, F, Gac, Granular Activated Carbon, Industrial, Industrial Wastewaters, Organic Compounds, pH, Production, Removal, Technology, Temperature, Toxic, Treatment

? Nagajyothi, K., Raghawan, P.S. and Gopalan, R. (2001), Kinetics of phenylhydrazine-glucose reaction in anionic and cationic surfactant media. *Asian Journal of Chemistry*, **13** (4), 1443-1446.

Full Text: 2001\Asi J Che13, 1443.pdf

Abstract: Osazone formation by glucose has been shown to occur at room temperature in the presence of surfactants. The kinetics of this reaction reveal that the rate is increased by both anionic and cationic surfactants at premicellar concentrations whereas it is retarded at postmicellar concentrations. Also, in the presence of surfactants, the reaction depends on the first order on phenylhydrazine but is zero order with respect to glucose. A mechanism involving adsorption of phenylhydrazine on surfactant as a slow step followed by a fast attack by glucose is proposed.

Keywords: Adsorption, Cationic, Glucose, Kinetics, Surfactant, Temperature

? Farooqui, M. and Kotharkar, S. (2001), Adsorption of Cr(VI) on agricultural byproducts. *Asian Journal of Chemistry*, **13** (4), 1655-1657.

Full Text: 2001\Asi J Che13, 1655.pdf

Abstract: The methi stem due to its well known adsorption characteristics has been taken for removal of Cf(VI) from the effluent. The result shows an encouraging high percentage removal of Cr(VI). Spectrophotometric method has been utilized with diphenyl carbazide as a reagent.

Keywords: Adsorption, Agricultural Byproducts, Cr(VI), Effluent, Removal, Spectrophotometric Method

? Farooqui, M. and Kotharkar, S. (2001), Study on binding of ferrous ions by Methi stem. *Asian Journal of Chemistry*, **13** (4), 1658-1660.

Full Text: 2001\Asi J Che13, 1658.pdf

Abstract: The presence of heavy metals such as Cu2+, Pb2+, Cd2+, Hg2+ and Fe2+ in waste water has been a matter of considerable concern in recent years because of their toxic properties. There are various methods such as precipitation, adsorption, ion exchange, etc. available to remove them from the effluent but all these methods are comparatively expensive. These heavy metals can be removed by using cheap agricultural waste products. In this communication use of stem of Fenugreek Methi (Trigonella foenum graecum) for binding of Fe2+ ions has been investigated. The effect of pH, temperature and contact time has been thoroughly studied.

Keywords: Adsorption, Agricultural Waste, Contact Time, Cu2+, Effluent, Exchange, Heavy Metals, Hg2+, Ion Exchange, Metals, Pb2+, pH, Temperature, Toxic, Waste Water, Water

? Arora, H., Bhardwaj, S.S. and Sharma, B.D. (2002), Effect of pH of supporting electrolyte on boron adsorption by some soils of Punjab. *Asian Journal of Chemistry*, **14** (1), 272-276.

Full Text: 2002\Asi J Che14, 272.pdf

Abstract: Adsorption is one of the most important processes affecting the availability of boron in soils. Boron adsorption on soil constituents is dependent on solution pH. Therefore, the effect of pH on boron adsorption by 12 soils from well defined soil series of Punjab was studied at varying pH of supporting electrolyte solutions of NaCl and CaCl2. The adsorption of boron increased with increase in pH up to 8 or 9 and thereafter the adsorption decreased with increase in pH in most of the soils, However, in some of the soils, there was an increase in boron adsorption with increase in pH over the entire range of pH (5-11) in the presence of CaCl2 only.

Keywords: Adsorption, Boron, Boron Adsorption, Effect of Ph, Montmorillonite, Nacl, pH, Punjab, Soil, Soils, Supporting Electrolyte

? Rai, K., Jaiswal, M. and Maheshwari, A. (2002), Characterisation of plastic clay and prophyllite used as adsorbents for the removal of pollutants. *Asian Journal of Chemistry*, **14** (1), 367-370.

Full Text: 2002\Asi J Che14, 367.pdf

Abstract: Studies were made in search of non-conventional cheap adsorbents to use them for waste water treatment. Clay minerals, namely plastic clay and prophyllite, were characterised with IR, XRD and standard methods of chemical analysis. These have been tried for the removal of phenol, a-nitrophenol, p-nitrophenol, a-cresol, m-cresol, p-cresol, oxalate, Cr(VI), PO43- through batch adsorption and the results confirmed these to be good adsorbents.

Keywords: Adsorbents, Adsorption, Analysis, Batch, Clay, Cr(VI), Ir, Ir Spectra, M-Cresol, P-Cresol, Phenol, Plastic Clay, Pollutants, Pyrophyllite, Removal, Removal of Pollutants, Treatment, Waste Water, Water, Water Treatment, X-Ray Diffractogram, Xrd

? Singh, A.K. and Singh, B.K. (2002), Adsorption isotherm for copper-benzotriazole system in HCI. *Asian Journal of Chemistry*, **14** (1), 497-499.

Full Text: 2002\Asi J Che14, 497.pdf

Abstract: The adsorption for copper benzotriazole system is presented. Upon analysis it shows that the adsorption is due to Frumkin. During the analysis relative size has been taken into account.

Keywords: Adsorption, Adsorption Isotherm, Analysis, Copper, Copper-Benzotriazole, Isotherm, System

? Al-Shayeb, S.M. (2002), Comparison study of Phoenix dactylifera L. and Nerium oleander L. as biomonitors for lead and other elements. *Asian Journal of Chemistry*, **14** (2), 597-601.

Full Text: 2002\Asi J Che14, 597.pdf

Abstract: The ability of Phoenix dactylifera leaflets to retain heavy metal pollutants was compared with the leaves of Nerium oleander. Pair samples of the two species were collected from 15 sites with different degrees of metal pollution in Riyadh city. The metal content (Pb, Zn, Cu, Cr, Ni and Li) was determined for washed and unwashed samples. Both plant species seem to have a comparable ability to retain these elements on the unwashed leaves. However N. oleander showed higher lead, zinc and copper levels in the washed leaves than P. dactylifera leaflets which could be attributed to their adsorption in leaf surfaces.

Keywords: Adsorption, Arid Environments, Biomonitors, Copper, Cr, Cu, Heavy Metal, Lead, Leaf, Li, Nerium Oleander l., Ni, Pb, Phoenix Dactylifera l., Pollutants, Pollution, Riyadh City, Surfaces, Zinc, Zn

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Full Text: 2002\Asi J Che14, 739.pdf

Abstract: Attempts were made to remove Cr(VI) from tannery effluents, PO(4)(3-)from gelatin industry effluent and C2O42- from oxalic acid manufacturing unit effluent by plastic clay and pyrophyllite adsorbent. The adsorption of Cr(VI), PO43- and C2O42- was found to be appreciable in both adsorbents but removal was higher in plastic clay for Cr(VI) and C2O42-. Removal PO43- was higher on pyrophyllite. The percentage removal of Cr(VI), PO43- and C2O42- in industrial waste waters was 43.8, 49.6 and 53.4 on plastic clay and 21.9, 53.1, 34.3 on pyrophyllite respectively. The equilibrium data fit well within the Langmuir and Freundlich isotherms.

Keywords: Adsorbent, Adsorbents, Adsorption, China-Clay, Chromium, Clay, Cr(VI), Effluent, Effluents, Equilibrium, Freundlich, Industrial, Industrial Effluents, Industrial Waste, Isotherms, Langmuir, Langmuir And Freundlich Isotherms, Plastic Clay, Pollutants, Pyrophyllite, Removal, Removal of Pollutants

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Full Text: 2002\Asi J Che14, 746.pdf

Abstract: Boron, one of the essential micronutrient elements, has a marked effect on plants, from the standpoint of both plant nutrition and toxicity. Organic matter is one of the main sources of boron in soils. Therefore, the present investigation was undertaken to study the effect of organic matter on boron adsorption by twelve soils of Punjab. Results revealed that there was a decrease in the adsorption of boron with the removal of organic matter content in majority of the soils except in some soils of semi-arid and and regions. In most of these soils there was a negligible change in adsorption with the removal of organic matter.

Keywords: Adsorption, Adsorption Soils, Boron, Boron Adsorption, Desorption, Organic Matter, Plants, Punjab, Removal, Soils, Sorption, Toxicity

? Nouri, S. (2002), Effect of different treatment on the adsorption of p-cresol by activated carbon (Langmuir isotherm). *Asian Journal of Chemistry*, **14** (2), 934-942.

Full Text: 2002\Asi J Che14, 934.pdf

Abstract: Adsorption of p-cresol by four activated carbons; (one untreated and three treated) was carried out at 301 K and at controlled pH conditions. In acidic conditions such that pH of solution is well below the pK(a) of p-cresol (molecular form), it was observed that the adsorbate solubility and the electron density of aromatic ring and also those of the carbon surface, are the main forces involved in the adsorption process, by affecting the extent of London dispersion forces. In higher solution pH conditions (in ionic form), on the other hand, it was found that the electrostatic forces played a significant role on the extent of adsorption. The effect of pH must be considered from its combined effects on the carbon surface and on the, solute molecules. It was found that the uptake of the molecular form of the aromatic solute was dependent on the substituents of the aromatic ring. Adsorption of the solute in higher pH values was found to be dependent on the concentration of anionic form of the solute. All isotherms were fitted into Langmuir isotherm equations to find the relative factors.

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Carbon, Density, Dilute Aqueous-Solution, Effects of Pill, Isotherm, Isotherms, Langmuir, Langmuir Isotherm, Molecules, P-Cresol, pH, Solubility, Spectrophotometer, Systems, Treatment, Uptake, Weak Organic Electrolytes

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Full Text: 2002\Asi J Che14, 1009.pdf

Abstract: Increasing environmental awareness and concern have expanded the role of powdered activated carbon (PAC) and granular activated carbon (GAC) adsorbents in scavenging the soluble, chemically stable and biologically non-degradable pollutants from industrial and domestic wastewater. In the present investigation adsorbents prepared from bituminous coal, namely, Filtrasorb-100 (F-100), Filtrasorb-200 (F-200), Filtrasorb-300 (F-300), Filtrasorb-400 (F-400) and coconut shell based carbons LCK and RRL were evaluated for their efficiency and performance in scavenging pollutants from water. Aqueous solution of in-nitrophenol was used as adsorbate. These GAC samples were subjected to Proximate and Ultimate Analysis, Pore Size Distribution (PSD), Scanning Electron Microscopy (SEM) and Fourier Transform Infrared Spectroscopy (FTIR). Results show that the source material used for preparation of GAC has significant effect on its pore structure, surface texture, resistance to fragmentation and adsorption capacity. Bituminous coal based carbons show high ash content, a rough surface having lot of cracks and irregular protrusions, high pore volume and a widely dispersed pore structure. In contrast, the coconut shell based GAC samples have low ash content, low pore volume and exhibit uniformly dispersed finer pores, which are well connected by solid mass. FTIR spectra show the presence of various carbon-oxygen complexes on the granular activated carbon surface, which makes the surface slightly polar. The effect of physico-chemical parameters associated with the adsorbent on the adsorption equilibrium and adsorbate removal rate was also studied, Adsorption equilibrium and kinetic experiments were carried out in a batch reactor. The obtained results showed that bituminous coal based carbons have higher adsorption capacity for phenols as compared to the coconut shell based carbons.

Keywords: Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption, Adsorption Capacity, Adsorption Equilibrium, Adsorption Kinetics, Aqueous Solution, Batch, Capacity, Carbon, Distribution, Equilibrium, Ftir, Gac, Granular Activated Carbon, Industrial, Kinetic, Pac, Phenols, Pollutants, Pore, Pore Size Distribution, Pore Structure, Pore Volume, Removal, Scanning Electron Microscopy, Sem, Volume, Wastewater, Water

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Full Text: 2002\Asi J Che14, 1031.pdf

Abstract: The possibilities of removal of zinc and cadmium have been investigated using activated carbon. The experiments were conducted with soil solutions containing zinc and cadmum. Considerable amounts of zinc and cadmium are removed by powdered activated carbon from soil solutions. The amount of these metals removed strongly. depends upon the pH of the solution.

Keywords: Activated Carbon, Adsorption, Cadmium, Carbon, Carbon Adsorption, Metals, pH, Removal, Soil, Zinc

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Full Text: 2002\Asi J Che14, 1257.pdf

Abstract: Adsorption of toxic metal ions like Hg2+, Pb2+ and transition metal Zn2+ on on different agricultural byproducts were measured by UV-visible spectrophotometer-108. Adsorption of metal ions follows the order polymerized Citrus sinensis (mosambi) skin > Coffea arabica (coffee) husk for Hg2+ and Pb2+ and Citrus sinensis skin < Coffea arabica husk for Zn2+ metal ion. Citrus sinensis skin showed maximum adsorbing capacity for Hg2+ and Pb2+ metal ions. It could also be seen that Hg2+ metal ion is a good adsorbing adsorbate as compared to Pb2+ and Zn2+ metal ions. The values of Freundlich constants (n and k) are estimated from graph which are found to be l/n < 1 and k > 1.

Keywords: Adsorption, Agricultural Byproducts, Capacity, Citrus Sinensis, Citrus Sinensis Skin, Coffea Arabica Husk, Freundlich, Hg2+, Metal Ions, Pb2+, Skin, Toxic, Toxic Metal Ions

? Uzun, A., Soylak, M., Elci, L. and Dogan, M. (2002), Application of sorbent extraction for preconcentration separation of trace amounts of cadmium(II), silver(I), gold(II) and lead(II) from metallic zinc samples and their determinations by atomic absorption spectrometry. *Asian Journal of Chemistry*, **14** (3-4), 1277-1281.

Full Text: 2002\Asi J Che14, 1277.pdf

Abstract: The determinations of cadmium(H), silver(I), gold(II) and lead(II) in metallic zinc samples were performed using separation-preconcentration procedure on an Amberlite XAD-16 adsorption resin column. Cadmium, silver, gold and lead were quantitatively recovered and separated from a solution containing 1 M HCl and 0.3 M NaI. Effects of the matrix have been investigated. The recoveries of interesting elements wre found to be in the range of 95-103% through the use of proposed method. The procedure was successfully applied to the determination of trace impurities in four metallic zinc samples (recoveries > 95%, relative standard deviations < 10).

Keywords: Absorption, Activated Carbon Column, Adsorption, Aluminum, Amberlite Xad-16, Amberlite Xad-16 Resin, Atomic Absorption Spectrometry, Cadmium, Cadmium(II), Copper, Determination, Extraction, Gold, Impurities, Lead, Lead(II), Metallic Zinc, Microcrystalline Naphthalene, Nickel, Plasma-Mass Spectrometry, Preconcentration, Resin, Separation, Solid-Phase Extraction, Sorbent, Water, Zinc

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Full Text: 2002\Asi J Che14, 1533.pdf

Abstract: Demands for a better quality of treated effluent have led to an intensive use of adsorption process as a polishing technology. The present study was aimed at removing iron using a non-conventional adsorbent, bentonite clay and a comparison of the same with activated carbon which happens to be a conventional adsorbent. The effect of contact time, adsorbent dosage, pH and initial concentration on the kinetics of adsorption was studied. It was shown that iron removal increases with increasing contact time and becomes constant after 1 h. In case of both bentonite clay and,activate A carbon percentage, of adsorption was found to increase with increasing adsorbent dosage. The effect of pH on removal of Fe(II) showed that % adsorption increases with inceasing pH up to a certain level; thereafter it decreases. The rate constants for removal,of Fe(II) with bentonite clay and activated carbon for varying initial metal concentration showed it to be a first order kinetics. The adsorption data fitted well into Freundlich adsorption isotherm The comparison of K, the adsorption capacity, and 1/n, the adsorption intensity, values showed that bentonite clay, a non-conventional adsorbent, is on par with activated carbon in effectively removing Fe(II) from an aqueous solution.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Isotherm, Bentonite, Bentonite Clay, Capacity, Carbon, Clay, Comparison, Contact Time, Dynamics, Effluent, Fe(II), First Order Kinetics, Freundlich, Freundlich Adsorption, Iron, Isotherm, Kinetics, Non-Conventional Adsorbent, pH, Removal, Technology

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Full Text: 2003\Asi J Che15, 79.pdf

Abstract: Ultrafine particles of alpha-Fe2O3 dispersed natural rubber composite film prepared by solvent casting method are reported. The prepared film is subjected to Ca2+ ions adsorption. The adsorbent is characterised with XRD, SEM and thermal studies. The eluent is estimated for Ca2+ ions by EDTA complexometric titration and the results arc compared before adsorption. The solution state conductivity shows increase in conductivity due to decrease in concentration of Ca2+ ions.

Keywords: Adsorbent, Adsorption, Alpha-Fe2O3 Structure, Ca2+, Composite, EDTA, Morphology, Sem, Titration, Xrd

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Full Text: 2003\Asi J Che15, 263.pdf

Abstract: Increasing environmental awareness and concern are bound to expand the role of activated carbon as a highly efficient and broad spectrum technology for the removal of organic pollutants from aqueous waste. Adsorption equilibrium and kinetics of some priority pollutants were studied on Filtrasorbs-300 at 30degreesC. The. effect of various physico-chemical parameters associated with both absorbent and adsorbate on the adsorption rate and equilibrium were investigated. A batch reactor was selected for the evaluation and kinetic data. The adsorption data were analysed by Langmuir and B.E.T. isotherm equation and the rate of removal of adsorbate was calculated from the kinetic data by using a simplified rate expression based on Langmuir theory. All the adsorbates were analysed by UV absorption spectrophotometry.

Keywords: Absorption, Activated Carbon, Activated Carbon, Adsorption, Adsorption Equilibrium, Adsorption Kinetics, Batch, Batch Systern, Buffer Solution, Carbon, Equilibrium, Evaluation, Isotherm, Kinetic, Kinetics, Langmuir, Langmuir Adsorption, Organic Pollutants, pH, Phenols, Pollutants, Removal, Technology, Uv, Waste Water

? Inci, I. (2003), Investigation of adsorption of gluconic acid from aqueous solutions by activated carbon. *Asian Journal of Chemistry*, **15** (1), 325-330.

Full Text: 2003\Asi J Che15, 325.pdf

Abstract: The separation of gluconic acid from aqueous solutions using activated carbon was examined. Experiments were carried out in the system of aqueous gluconic acid solutions (0.75, 1.5, 3, 5 and 8%, W/W) and different amounts of-activated carbon (0.001, 0.002, 0.003, 0.004, 0.005, 0.006, 0.007 and 0.008 g) as adsorbent. The equilibrium distributions of gluconic acid were measured. Adsorption experiments were carried out at 298 K. The adsorption of gluconic acid was found to be appreciable in activated carbon. The percentage removal of gluconic acid was 94.14%. The equilibrium data fit well within the Freundlich isotherms.

Keywords: Activated Carbon, Adsorbent, Adsorption, Aqueous Solutions, Carbon, Equilibrium, Freundlich, Freundlich Isotherm, Gluconic Acid, Isotherms, Removal, Separation, System

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Full Text: 2003\Asi J Che15, 772.pdf

Abstract: The present work involved Ni(II) removal by a non-conventional adsorbent, Kaolinite clay. The effect of contact time, adsorbent dosage, pH and initial concentration of the metal ion on the kinetics of adsorption was studied. It was observed that Ni(II) removal increases with increasing contact time and becomes constant after 5 h. As the adsorbent dosage is increased from 2 to 4 g percentage reduction increase continuously. The effect of pH on the removal of Ni(II) showed that percentage adsorption increases with increasing pH up to 9. The adsorption data was fitted will in Freundlich isotherm, Langmuir isotherm, Langeygran’s equation and also Weber Morris equation.

Keywords: Adsorbent, Adsorption, Adsorption Kinetics, Batch Technique, Clay, Contact Time, Freundlich, Freundlich Isotherm, Isotherm, Kaolinite, Kaolinite Clay, Kinetics, Langmuir, Langmuir Isotherm, Ni(II), Ni(II) Removal, Non-Conventional Adsorbent, pH, Reduction, Removal

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Full Text: [2003\Asi J Che15, 891.PDF](2003/Asi%20J%20Che15,%20891.PDF)

Abstract: The influence of pH on reactive dyes adsorption from solution is studied in this paper. The adsorbent used was filtrasorb 400 (FS-400) which showed a high equilibrium capacity for hardly adsorbable reactive dyes. The adsorption performance of FS-400 was not affected over a wide pH range (3-10), hence FS-400 is considered as a pH-insensitive adsorbent. Hydrolysed reactive dyes, the state at which reactive dyes are usually discharged, were effectively adsorbed by FS-400. Capacities ranging from 20-80% by weight of FS-400 have been realized.

Keywords: Adsorption, pH, Reactive Dyes, pH-Insensitive Adsorbents, Activated Carbon, Aqueous-Solutions, Equilibrium, Sorption, Behavior, Removal

? Arora, H., Bhardwaj, S.S. and Sharma, B.D. (2003), Thermodynamics of manganese adsorption on some soils. *Asian Journal of Chemistry*, **15** (2), 1045-1049.

Full Text: 2003\Asi J Che15, 1045.pdf

Abstract: Adsorption reactions are of utmost importance to understand the availability of nutrients to the plants. The thermodynamic parameters (DeltaGdegrees, DeltaHdegrees and DeltaSdegrees) or the adsorption of manganese on six soils were calculated at two temperatures, i.e., 25 and 35degreesC. The adsorption data, fitted into the linear form of the Langmuir equation, made it possible to evaluate the adsorption maxima and binding energy. The values of DeltaGdegrees, DeltaHdegrees and DeltaSdegrees were found to be negative in a the soils indicating the exothermic and spontaneous nature of the adsorption reaction.

Keywords: (ΔG°, ΔH° and ΔS°), Adsorption, Langmuir, Langmuir Equation, Mn Adsorption, Nutrients, Plants, Soils, Thermodynamic, Thermodynamic Parameters, Thermodynamics

? Raghuwanshi, P.B., Deshmukh, A.Y. and Doshi, A.G. (2003), Adsorption of lead(II), cadmium(II) and copper(II) ions on agricultural byproducts. *Asian Journal of Chemistry*, **15** (3), 1531-1534.

Full Text: [2003\Asi J Che15, 1531.PDF](2003/Asi%20J%20Che15,%201531.PDF)

Abstract: Adsorption of Pb2+, Cd2+ and Cu2+ on different agricultural byproducts has been measured at different temperatures. Adsorption of metal ions follows the order: polymerized orange skin < banana husk for Cd(II) and Pb(II) and orange skin > banana husk for Cu(II). It could also be seen that Cu(II) is a good adsorbing agent as compared to Cd(II) and Pb(II). Thermodynamic parameters have also been evaluated.

Keywords: Adsorption, Agricultural Products, Pb(II), Cd(II), Cu(II), Metal-Ions

? Soylak, M. (2003), Adsorption of some metal chelates on polystyrene divinyl benzene copolymers. *Asian Journal of Chemistry*, **15** (3), 1780-1784.

Full Text: [2003\Asi J Che15, 1780.pdf](2003/Asi%20J%20Che15,%201780.pdf)

Abstract: In the present work, adsorption of metal chelates (8-hydroxyquinoline and 1-nitroso-2-naphthol chelates) on the surface of polystyrene divinyl benzene copolymers (amberlite XAD-4 and diaion HP-20) resin were investigated by using flame atomic absorption spectrometry (FAAS) and scanning electron microscope (SEM). The optimal conditions for the quantitative adsorption and recovery of the metal ions on diaion HP-20 and amberlite XAD-4 were discussed.

Keywords: Amberlite XAD-4, Diaion HP-20, Preconcentration, Scanning Electron Microscope, Flame Atomic Absorption Spectrometry, Adsorption, 8-Hydroxyquinoline, 1-Nitroso-2-Naphthol, Trace Metal, Atomic-Absorption Spectrometry, Drinking-Water, Preconcentration, Samples, Lead, Flow, Cadmium(II), Industrial, Minicolumn, Extraction

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Full Text: 2004\Asi J Che16, 227.pdf

Abstract: Activated charcoals have been prepared from the agricultural wastes of Cajans cajan and Cicer arietinum using chemical activating agents such as ZnCl2 and orthophosphoric acid. Adsorption studies on the carbon samples TCzn, TCph and HCzn obtained from Cajanus cajan and Cicer arietinum have shown that all the materials have a good uptake capacity for acetic acid and oxalic acid. Langmuir adsorption isotherm is valid for all the carbon samples. Preliminary studies of adsorption of p-chlorophenol on all carbon samples have also given encouraging results. TCzn = Charcoal from Cajanus cajan activated with 10% ZnCl2 TCph = Charcoal from Cicer arietinum activated with 20% phosphoric acid HCzn = Charcoal from Cicer arietinum activated with 10% ZnCl2.

Keywords: Acetic Acid, Activated Charcoal, Adsorption, Adsorption Isotherm, Cajanus Cajan, Capacity, Carbon, Carbons, Charcoal, Cicer Arietinum, Isotherm, Langmuir, Langmuir Adsorption Isotherm, Pyrolysis, Uptake

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Full Text: 2004\Asi J Che16, 279.pdf

Abstract: The adsorption technique using coconut husk was applied for the removal of Ni2+ ions from aqueous samples. The dried and powdered husk was contacted with acidified formaldehyde and the product so obtained is highly efficient in adsorbing Ni2+ ions from the solutions. The extent of removal/adsorption was dependent upon the pH, amount of adsorbent used and the time of contact. The sorbent is effective for quantitative removal of Ni2+ ions in alkaline conditions and equilibrium has been achieved in 1 h. This method is quite feasible, economic, time saving and low cost.

Keywords: Adsorbent, Adsorption, Aqueous Medium, Coconut Husk, Cost, Equilibrium, Formaldehyde, Low Cost Adsorbent, Ni(II), Ni2+, pH, Removal, Sorbent

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Full Text: [2004\Asi J Che16, 323.PDF](2004/Asi%20J%20Che16,%20323.PDF)

Abstract: Chitin and its deacetylated form has been used as adsorbent for the removal of Cr(VI) in aqueous media. The effect of various parameters influencing the Cr(VI) adsorption such as pH, initial metal ion concentration and adsorbent dose has been studied. The optimum pH for adsorption of Cr(VI) on chitin and deacetylated chitin was found to be 2.0 and 3.0 respectively. It has been found that metal removal percentage increases with adsorbent dose. Increase in initial metal ion. concentration decreases the per cent removal, but the amount of Cr(VI) adsorbed per unit weight of adsorbent increases. It has been also found that deacetylated chitin shows greater potential for removal of Cr(VI) as compared to chitin. The data obtained from batch process wag used to fit in Freundlich and Langmuir adsorption model.

Keywords: Natural Polymer, Chromium(VI), Batch Adsorption Process, Polymer Chitin, Deacetylated Chitin, Hexavalent Chromium, Adsorption, Chitosan, Kinetics

? Babu, C.R., Raghunandan, P. and Jayaveera, K.N. (2004), Removal of toxic Chromium(VI) by the adsorption of activated carbons prepared from Mahua shells. *Asian Journal of Chemistry*, **16** (2), 617-622.

Full Text: 2004\Asi J Che16, 617.pdf

Abstract: Removal of toxic Cr(VI) in aqueous medium was investigated using activated carbon adsorbents prepared from Mahua seed shells. The pH effect, concentration, adsorbent dosage and contact time period were studied in batch experiment. The removal of Cr(VI) was in general most effective at pH range 2.0-4.0. Activated carbons are prepared at 800+/-50degreesC temperature. One is non-impregnated and the remaining three are impregnated with zinc chloride in 1:1, 1:2, 1:3 ratio. Important characteristics of activated. carbons are also investigated. The data for all the adsorbents fit well to the Freundlich adsorption isotherm. The removal of Cr(VI) is around 97% was observed with 1:2 impregnated activated carbon at pH 3.0 whereas other adsorbents showed much lower activities.

Keywords: Activated Carbon, Activated Carbons, Activated Mahua Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Isotherm, Aqueous Medium, Batch, Carbon, Chromium(VI), Contact Time, Cr(VI), Dye, Freundlich, Freundlich Adsorption, Isotherm, pH, Removal, Temperature, Zinc

? Inci, I. (2004), Removal of citric acid by activated carbon adsorption. *Asian Journal of Chemistry*, **16** (2), 649-653.

Full Text: 2004\Asi J Che16, 649.pdf

Abstract: The possibilities of removal of citric acid using activated carbon have been investigated. During the analysis initial citric acid concentration and amount of activated carbon have been taken into account. The experimentrs were conducted with aqueous solutions containing citric acid in four different concentrations (4, 4.5, 7, 13%, w/w). As adsorbent activated carbon was used in live different amount (0.005, 0.010, 0.015, 0.020, 0.025 g). Considerable amount of citric acid was removed by activated carbon. The amount of acid removed by activated carbon depends upon activated carbon amount. Experimental data were fitted into the Freundlich isotherm to obtain the values of adsorption parameters.

Keywords: Activated Carbon, Adsorbent, Adsorption, Amines, Analysis, Aqueous Solutions, Carbon, Citric Acid, Freundlich, Freundlich Isotherm, Isotherm, Organic Solutions, Removal, Water

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Full Text: 2004\Asi J Che16, 795.pdf

Abstract: Removal of Congo Red dye from an aqueous solution has been studied using sorbent prepared from sawdust treated with HCHO and dil. H2SO4. The effects of pH, contact time, sorbent dose and initial dye concentration have been studied. Effect of diverse ions has also been studied. The optimum removal is obtained at pH = 6, 90 min time of contact, 1 g of sorbent dose and low dye concentration. The amount of dye adsorbed per g of sorbent increases with increasing initial concentration. Different light metals and other ions do not affect the system.

Keywords: Adsorption, Adsorption, Alumina, Aqueous-Solutions, Congo Red Dye, Contact Time, Dye, Fly-Ash, H2so4, Hcho, Light, Metals, Mixed Adsorbents, pH, Removal, Sawdust, Sorbent, System, Wastes

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Full Text: 2004\Asi J Che16, 1104.pdf

Abstract: Agricultural byproducts like orange, banana, pomegranate, apple, chickoo, sweetlime were used in their natural state on which the study of adsorption of toxic metal ions Pb(II), Cd(II), Hg(II) and Cu(II) at 27degreesC has been made. The values of Freundlich constants (n and k) are estimated from the study. It can be seen that adsorption increases with the increase in concentration of metal ions.

Keywords: Adsorption, Agricultural Byproducts, Cd(II), Cu(II), Freundlich, Hg(II), Metal Ions, Pb(II), Toxic Metal Ions

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Full Text: [2004\Asi J Che16, 1269.PDF](2004/Asi%20J%20Che16,%201269.PDF)

Abstract: Bioremediation of phenol, ammonia, nickel, hexavalent chromium and iron from untreated steel plant effluent of Visakhapatnam city was carried out using different bacteria. Live Bacillus species could remove 8% phenol, 100% ammonia, 92.5% nickel, 88% hexavalent chromium and 73.1% iron(II), from industrial effluent. Biosorption technique showed 100% and 97% of chromium removal by Staphylococcus aureus and Bacillus species (BS2) respectively. There was 90.7 and 47.7 removal of ammonia by Bacillus species and Staphylococcus aureus respectively by immobilization technique. Chi-square test was employed to test whether the results obtained were significant or not at the level of P < 0.05.

Keywords: Bioremediation, Pollutants, Steel Plant, Effluent, Bacteria, Biosorption, Immobilization

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Full Text: 2004\Asi J Che16, 1367.pdf

Abstract: The properties of two agarose based chelating ion exchangers with, respectively, dipicolyl amine (DPA) and tris(2-aininoethyl) amine (TREN) as functional groups are investigated and compared to those of a previously studied adsorbent functionalized with iminodiacetic acid (IDA), with the same matrix, for preconcentration of Cu, Co and Ni in water. Binding capacities, adsorption rates and column recoveries of the metal ions are carefully investigated. An ICP-AES instrument is used for measurements. The capacity of the IDA adsorbent for Cu, Co and Ni was similar and is averaged to 50 (+/- 7) =mumol/mL, while for the DPA and TREN sorbents the capacity was more variable and pH-dependent. The highest capacity of the new adsorbents was obtained for copper, which is averaged to 18.3 (+/-0.3) and 120 (+/-6) mumol/mL, respectively. Kinetic studies indicated relatively high adsorption rates of Cu on all the sorbents. Nickel, on the other hand, showed relatively slow rates on the DPA and TREN chelators. High column recoveries were obtained for all the studied metal ions on the IDA adsorbent and only some loss of Ni was observed at high pHs. The column recoveries for the DPA sorbent, on the other hand, were quite low for Cu and Ni. It indicated high recoveries only for Co. which rose up to 93.8 (+/-1.8)%. Copper was almost quantitatively recovered on the TREN sorbent, with low and pH dependent recoveries for Co and Ni. The method was evaluated by preconcentration of spiked river water samples. Good agreement was obtained between the results obtained for natural samples and standard solutions. In general, more selectivities, slower adsorption rates and lower and more pH dependent recoveries were identified for the DPA and TREN sorbents compared to that with the IDA groups.

Keywords: Adsorbent, Adsorbents, Adsorption, Affinity-Chromatography, Agarose, Capacity, Chelating Ion Exchangers, Copper, Icp-Aes, Kinetic, Kinetic Studies, Metal Ions, Nickel, pH, Polymers, Preconcentration, Resin, Separation, Sorbent, Spectrometry, Supports, System, Trace-Metals, Tren, Water, Water Samples

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Full Text: 2004\Asi J Che16, 1391.pdf

Abstract: Soils, which are made up of alumino-silicate systems, possess the property of adsorbing foreign substances on their surface in a variety of ways. Organic pesticides, although undergo exchange reactions with the clays, some of them enter into the interlamellar spaces in the formation of organo-clay complexes. The present study was made to judge the validity of Lindstrom model in the adsorption of cypcrmethrin on H- and Na-montmorillonites. The rate constants in this study showed variations for adsorption-desorption process pointing to the non-applicability of Lindstrom model in the present study. The variations may be attributed to the heterogeneous reactive sites for the adsorption.

Keywords: Adsorption, Alumino Silicate, Aluminosilicate, Cypermethrin, Exchange, Kinetics, Model, Montmorillonite, Montmorillonite Clays, Oxamyl, Pesticides, Soils, Thermodynamics

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Full Text: 2004\Asi J Che16, 1720.pdf

Abstract: Studies on removal of cobalt from aqueous solution by adsorption on granular activated carbon (GAC) containing adsorbed 3,5-dinitrosalicylic acid (DNSA) have been carried out at temperature 25 +/- 0.5degreesC. The adsorption isotherm of Co on GAC have been determined and the data fitted reasonably well to the Langmuir and Freundlich isotherm for activated carbon.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherm, Carbon, Cobalt, Freundlich, Freundlich Isotherm, Gac, Granular Activated Carbon, Isotherm, Langmuir, Langmuir And Freundlich Isotherm, Removal, Temperature

? Shah, B.A., Shah, A.V. and Bhandari, B.N. (2004), Recovery of transition metal ions from binary mixtures by ion-exchange column chromatography using synthesized chelating resin derived from m-cresol. *Asian Journal of Chemistry*, **16** (3-4), 1801-1810.

Full Text: 2004\Asi J Che16, 1801.pdf

Abstract: Chelating. ion-exchange resin was synthesized from oxine 8-hydroxyquinoline-formaldehyde-m-cresol. The physico-chemical properties like % moisture content, true density of resin (d(res)), apparent density of resin (d(col)), void volume fraction, total exchange capacity, rate of exchange, interruption test, salt splitting capacity, thermal stability, resin stability, pH study for metal ions and effect of metal ion concentration on exchange capacity were measured. The resin was characterized by FT-IR, H-1-NMR spectra and TGA. The quantitative separation of metal ions from the mixture of cadmium(II)-copper(II), lead(II)-zinc(II), copper(II)-zinc(II) and nickel(II)-zinc(II) was accomplished by selective sorption on column at optimized K-d values.

Keywords: Capacity, Chelating Resin, Density, Exchange, Ft-Ir, Ftir, Ion Exchange, Ion Exchange Column, Ion-Exchange Resin, M-Cresol, Metal Ions, Oxine, pH, Recovery, Resin, Separation, Sorption, Stability, Tga, Thermal Stability, Transition Metal Ions, Volume

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Full Text: 2004\Asi J Che16, 1863.pdf

Abstract: The dyes like methylene blue and malachite green were removed by Stalks of Cajanus cajan. Removal of dyes by agricultural waste was found to be comparable to the adsorbents like silica gel and graphite. The waste material was used for the removal of dyes without any chemical treatment. Sorption capacity of the stalks of Cajanas cajan for the removal of malachite green is more than for methylene blue. Sorption capacity was found to be nearly same at all the three temperatures (25, 30 and 40degreesC) indicating that this agricultural waste can be useful for the removal of dyes from the effluents in any season irrespective of temperature.

Keywords: Adsorbents, Adsorption, Agricultural Waste, Barks, Cajanus Cajan, Capacity, Dyes, Heavy-Metal Ions, Malachite Green, Methylene Blue, Removal, Scavengers, Silica, Silica Gel, Sorption, Sorption Capacity, Temperature, Treatment

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Full Text: 2005\Asi J Che17, 191.pdf

Abstract: The dried and powdered Aegal-marmelose fruit shell substrate is concentrated with 1% NaOH and the resin product so obtained is efficient in removing Cu(II) and Ni(II) from the solution. The metal ions uptake increases with increase in pH of the solution. It is observed that the maximum sorption efficiency of aegal-marmelose was found to be 5 and 6 respectively. It was found that more than 60% of the metal ions are removed by the substrates from the solution instantanousely by using packed column of the substrates. The metal ions concentration from the wastewater can be reduced to very low levels conforming to the acceptable water quality standards.

Keywords: Aegal-Marmelose Fruit Shell Substrate, Cu(II), Fruit Shell Substrate, Metal, Metal Ions, Ni(II), pH, Removal, Resin, Sorption, Wastewater, Water

? Zaggout, F.R. (2005), Uptake of zinc from polluted water by decaying Tamrix gallica leaves. *Asian Journal of Chemistry*, **17** (1), 209-218.

Full Text: 2005\Asi J Che17, 209.pdf

Abstract: Uptake of zinc ions from aqueous solutions by Tamrix gallica leaves was studied. The effect of several factors on this removal was studied including metal ions concentration: tamrix leaves concentration, pH, presence of competing ions, agitation, crushing, drying, presence of complexing agent and leaf extract. Application of Freundlich adsorption isotherm on the present results has been examined and the parameters of this isotherm have been calculated. The interaction between metal ions and tamrix leaves has been determined and mechanism for this interaction suggested.

Keywords: Adsorption, Adsorption Isotherm, Aluminum, Aqueous Solutions, Copper, Freundlich, Freundlich Adsorption, Isotherm, Leaf, Metal Ions, Nickel, pH, Removal, Tamrix Gallica Leaves, Uptake, Water, Zinc, Zinc Ions

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Full Text: 2005\Asi J Che17, 415.pdf

Abstract: Batch adsorption kinetic studies were carried out on electroplating wastewater with Powdered commercial charcoal (specific surface area 5401.69 cm(2)/g) and powdered activated charcoal (specific surface area 5802.35 cm(2)/g) as adsorbents. The effect of concentration of adsorbent and contact duration were studied on copper and nickel removal efficiency. Higher efficiency (x/m value) of adsorption is obtained at lower dose of powdered activated charcoal (PAC), which removes 61.28% copper and 50.35% nickel at a maximum dose of 25 g/L, whereas similar dose of powdered commercial charcoal (PCC) removes 28.74% copper and 24.80% nickel respectively. From the results it can be concluded that PAC may be most effective than PCC in the removal of copper and nickel at very low dose. Their efficiencies are moderately affected by the pH and COD of the wastewater.

Keywords: Absorption, Activated Charcoal, Adsorbent, Adsorbents, Adsorption, Adsorption Isotherms, Carbon, Charcoal, Cod, Copper, Copper And Nickel Removal, Ions, Kinetic, Nickel, Pac, pH, Powdered Commercial And Activated Charcoal, Removal, Removal Efficiency, Surface Area, Wastewater

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Full Text: 2005\Asi J Che17, 475.pdf

Abstract: Attempts were made to adsorb malic acid from aqueous solutions by activated charcoal. Adsorption experiments were carried out in the system of aqueous malic acid solutions in four different concentrations [3, 5, 10 and 15 (w/w)] and in seven different amounts of activated charcoal (0.005, 0.010, 0.015, 0.020, 0.025, 0.030 and 0.040 g) as adsorbent. Adsorption experiments were carried out at 298 K. The adsorption of malic acid was found to be appreciable in activated charcoal. The percentage removal of malic acid was 94.14% by activated charcoal. The equilibrium data fit well within Langmuir and Freundlich isotherms.

Keywords: Activated Charcoal, Adsorbent, Adsorption, Amines, Aqueous Solutions, Charcoal, Equilibrium, Freundlich, Freundlich Isotherm, Isotherms, Langmuir, Langmuir And Freundlich Isotherms, Langmuir Isotherm, Malic Acid, Pollutants, Removal, System, Water

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Full Text: 2005\Asi J Che17, 737.pdf

Abstract: Adsorption of methylene blue from aqueous solution has been investigated on activated charcoal, silica gel and silica (clay) by spectrophotometric method. Langmuir and Freudich plots were drawn and their constants were evaluated from the relevant data, which determined the mechanism and the nature of forces involved in adsorbate-adsorbent interactions. Correlation coefficients of the entire data in connection with Langmuir and Freundlich plots for each adsorbent were also calculated. It was found that these regression coefficients approach 99% in most cases, which rather signifies the validity of the data for the straight line. An attempt has also been made to calculate the surface area of the adsorbent.

Keywords: Activated Charcoal, Adsorbent, Adsorption, Charcoal, Clay, Dye, Dyes, Freundlich, Freundlich And Langinuir Adsorption Isotherm, Langmuir, Methylene Blue, Silica, Silica Gel, Surface Area

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Full Text: 2005\Asi J Che17, 1411.pdf

Abstract: The adsorption of acetic acid on Alternenthera triandra using batch adsorption process has been investigated. The effect of certain parameters on adsorption has been studied. Applicability of Freundlich adsorption isotherm and Langmuir adsorption isotherm has also been tested. Various thermodynamic parameters such as Delta G, Delta H and Delta S are reported.

Keywords: Acetic Acid, Adsorption, Adsorption Isotherm, Alternenthera Triandra, Batch, Freundlich, Isotherm, Langmuir, Langmuir Adsorption Isotherm, Thermodynamic, Thermodynamic Parameters

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Full Text: 2005\Asi J Che17, 1877.pdf

Abstract: Activated carbon prepared from coconut residues, an agricultural waste byproduct obtained after oil extraction, has been used for the adsorption of Ni(II) from aqueous solution. The process of uptake obeys both Freundlich and Langmuir adsorption iso-therms. Kinetic studies indicate that it obeys Lagergran kinetic model. Quantitative removal of Ni(II) from 100 mL aqueous solution containing 10 mgtL of Ni(II) was observed over a pH range of 4.0 to 10.0. The suitability of this material for treating nickel-plating industry wastewater was also examined. A comparative study with a commercial granular activated carbon showed that coconut residues is 6 times more efficient compared to commercial activated carbon based on Langmuir adsorption capacity (Qo).

Keywords: Activated Carbon, Adsorption, Adsorption Capacity, Adsorption Isotherms, Agricultural Waste, Capacity, Carbon, Coconut Residues, Equilibrium, Extraction, Freundlich, Freundlich And Langmuir Adsorption Isotherms, Granular Activated Carbon, Isotherms, Kinetic, Kinetic Model, Kinetic Studies, Langmuir, Metals, Model, Ni(II) Removal, Nickel, pH, Removal, Wastewater, Water

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Full Text: 2005\Asi J Che17, 1941.pdf

Abstract: The ability of the newly synthesized vulcanized silica for removing Hg2+ and Pb2+ at different optimized conditions of concentrations, amounts of absorbent and pH has-been studied. Maximum adsorption for both the cations has been obtained at nearly neutral pH. Flame atomic absorption spectrometry was used for measuring lead and mercury concentration in stripped solutions. The isotherm curves for adsorption of two cations were obtained.

Keywords: Absorption, Adsorption, Amines, Atomic Absorption Spectrometry, Cations, Chemisorption, Flame Atomic Absorption Spectrometry, Gel, Heterogeneous System, Hg(II), Hg2+, Isotherm, Lead, Mild Conditions, Organic-Chemistry, Oxidation, Pb(II), Pb2+, pH, Silica, Sulfuric Acid, Nano2, Synthesis, Synthesized Vulcanized Silica, Water, Water Samples

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Full Text: 2005\Asi J Che17, 2184.pdf

Abstract: Bentonite, a clay, was used for the adsorption of hexavalent chromium [Cr(VI)] from aqueous solution. Effect of pH, dose of adsorbent and initial concentration was studied on adsorption by bentonite clay. Desorption of Cr(VI) was also studied. Adsorption experiments were conducted in a batch system and found to be maximum at pH 2.0. Equilibrium data fitted well to Langamuir isotherm model. The maximum adsorption capacity of bentomte clay was found to be 5.9 mg/g at an initial pH of 2.0 and 50 degrees C temperature. 0. 1 N NaOH could elute > 90% of Cr(VI) and bentonite retains the adsorption capacity without an appreciable loss, for three desorption and adsorption cycles.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Batch, Bentonite, Bentonite Clay, Capacity, Chromium, Clay, Cr(VI), Desorption, Effect of Ph, Equilibrium, Hexavalent Chromium, Isotherm, Model, pH, System, Temperature

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Full Text: [2005\Asi J Che17, 2284.PDF](2005/Asi%20J%20Che17,%202284.PDF)

Abstract: Activated clay has been employed to remove phenolic compounds, a common contaminant in wastewaters, being generated from petroleum and petrochemicals, coal conversion and phenol-producing industries. Because of its high surface area per unit area, activated carbon is die most effective adsorbent and exhibits high capacity for adsorption of phenolic compounds. Kinetics and isotherm studies were conducted to evaluate the adsorption capacity of natural and activated clay. The effect of contact time, pH, initial adsorbate concentration and temperature were studied. In comparison between the capacity adsorption of natural and activated clay, it has been seen that the activated clay adsorbs more than natural clay.

Keywords: Adsorption, Clay, Isotherm, Phenol, Adsorption, Bentonite, Oxidation

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Full Text: 2005\Asi J Che17, 2291.pdf

Abstract: Activated clay has been successfully applied for the removal of red dye H3BD in the industrial textile wastewater. Activated clay has proved its effectiveness as 98% of the dyes contained within the effluent are eliminated and the COD is reduced from 10800 ppm to 32 ppm with a neutral pH and an excellent decantability. A complete study of textile dye adsorption on acidified clay was performed changing several factors such as stirring velocity, contact time and initial concentration.

Keywords: Activated Clay, Adsorption, Adsorption, Aqueous-Solutions, Bentonite, Clay, Cod, Complete, Contact Time, Dye, Dyes, Montmorillonite, pH, Removal, Sorption, Textile, Treatment, Wastewater

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Full Text: 2005\Asi J Che17, 2415.pdf

Abstract: Chemically treated tur pods and banyan leaves with formaldehyde and sulphuric acid have been studied as sorbents for removal of toxic metals from aqueous solutions. Effects of time, initial concentration and pH at 30 degrees C have been studied. Sorption capacities have been estimated by Freundlich adsorption models. For tur pods the sorption capacity determined for different heavy metals resulted in the following order: Hg2+ > Cu2+ > Cd2+ > Pb2+ > Zn2+. The percentage of adsorption by banyan leaves is relatively low.

Keywords: Adsorption, Aqueous Solutions, Banyan Leaves, Capacity, Cu2+, Formaldehyde, Freundlich, Heavy Metals, Hg2+, Models, Pb2+, pH, Removal, Sorption, Sulphuric Acid, Toxic Metals, Tur Pods

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Full Text: 2005\Asi J Che17, 2487.pdf

Abstract: This study was conducted to investigate boron adsorption characteristics of ten topsoils having different properties and the relationship between these characteristics and some physical and chemical properties of soils. Boron adsorption data in nine (except soil 6) of the ten soils fit to the linear Langmuir adsorption isotherm. On the other hand, boron adsorption was described with Freundlich isotherm over the entire boron concentration ranges. According to these results, Langmuir and Freundlich adsorption isotherms could be applied to determine the boron adsorption maximum (b) and capacity (K-f). The boron adsorption maximum (b) and capacity (K-f) were found to be greater for soils high in clay and lime on the soils with basic pH. Stepwise regression models performed predicted 98.6 and 94.0% of the variance in Langmuir b and Freundlich Kf values, respectively. From the correlation analyses results, it is possible to suggest that soil pH, clay, sand and lime contents are the most influential soil properties on boron adsorption and leaching in the studied region.

Keywords: Adsorption, Adsorption Isotherm, Adsorption Isotherms, Boron, Boron Adsorption, Capacity, Clay, Deficiency, Desorption, Freundlich, Freundlich Adsorption Isotherms, Freundlich Isotherm, Isotherm, Isotherms, Langmuir, Langmuir Adsorption Isotherm, Langmuir And Freundlich Isotherms, Models, pH, Retention, Sand, Soil, Soils, Sorption

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Full Text: 2005\Asi J Che17, 2524.pdf

Abstract: Batch adsorption and desorption kinetics studies were carried out on electroplating wastewater using granular activated carbon with particle size 0.5-1.08 mm as an adsorbent. The effect of pH, Cr(VI) concentration, adsorbent dose and contact duration were studied in batch experiments. The desorption experiments were carried out by shaking granular activated carbon saturated with Cr(VI) in (i) distilled water (27 and 50 degrees C) and (II) 0.1 N NaOH. A reaction time of I h was maintained in the regeneration study. The removal of Cr(VI) was in general most effective at low pH values. The adsorption behaviour can be explained better on the basis of Freundlich and Langmuir adsorption isotherm model.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Isotherm, Adsorption Isotherms, Batch, Carbon, Chromium(VI), Cr(VI), Desorption, Freundlich, Granular Activated Carbon, Isotherm, Kinetics, Langmuir, Langmuir Adsorption Isotherm, Model, pH, Regeneration, Removal, Wastewater, Water

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Full Text: 2005\Asi J Che17, 2621.pdf

Abstract: The carbon obtained by treatment of tamarindnut with concentrated sulphuric acid under a weight ratio of I : I followed by soaking in 10% sodium bicarbonate solution exhibited a significant removal of Hg(II) from aqueous solutions over the pH range of 3-10 and commercially activated carbon in the pH range of 2-3 in batch studies. Based upon die findings, column studies were mainly conducted under optimum conditions to evaluate the removal of Hg(II) for large scale applications. For bicarbonate modified tamarindnut carbon an optimum flow rate of 13 mL/min with optimum bed height of 10.3 cm in 2.5 cm diameter column with optimum weight of 15 g of carbon was maintained. In the case of commercially activated carbon, 15 g of carbon with optimum flow rate of 5 mL/min was maintained with the optimum bed height of 5.8 cm. The breakthrough capacities of bicarbonate modified tamarindnut carbon and commercially activated carbon under optimum conditions were found to be 1440 and 52 mg respectivey per 15 g of carbon. Common anions and cations affected the removal,of Hg(II) on both the carbons. Breakthrough capacities were found but in the presence of wastewater containing Hg(II) and the potential of bicarbonate modified tamarindnut carbon was found to be 10 times superior to commercially activated carbon in the removal of Hg(II).

Keywords: Activated Carbon, Aqueous Solutions, Aqueous-Solution, Batch, Bicarbonate Treated Tamarindnut Carbon, Breakthrough, Carbon, Commercial Activated Carbon, Drinking-Water, Hg(II), Mercury(II), Mercury(II) Removal, pH, Removal, Sorption, Sulphuric Acid, Treatment, Wastewater, Weight

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Full Text: 2005\Asi J Che17, 2644.pdf

Abstract: A novel adsorbent, sulphuric acid treated cottonseed carbon after soaking in sodium bicarbonate, was employed for the removal of copper(II) from aqueous solution at concentrations between 1 and 10 mg/L, in batch equilibrium experiments, in order to determine its adsorption properties. The removal of copper by the adsorbent increases with increasing adsorbent dosages. The adsorption mechanism is assumed to be an ion exchange between copper and the sodium present on the surface of cottonseed carbon. The sorption data have been analyzed and fitted to Freundlich adsorption isotherm. The batch sorption kinetics has been tested for first order kinetics reaction models. Results also showed that the intra-particle diffusion of Cu(II) on the carbon was the main-limiting step.

Keywords: Adsorbent, Adsorption, Adsorption Isotherm, Adsorption Mechanism, Batch, Carbon, Copper, Copper(II), Cottonseed Carbon, Cu(II), Diffusion, Equilibrium, Exchange, First Order Kinetics, Freundlich, Freundlich Adsorption, Intra-Particle Diffusion, Ion Exchange, Isotherm, Kinetics, Models, Removal, Sorption, Sorption Kinetics, Sulphuric Acid

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Full Text: 2005\Asi J Che17, 2653.pdf

Abstract: Ferronia elefuntum fruit shell substrate was found to have good sorption capacity for cobalt(II) and chromium(VI). Studies indicate that the sorption of Co2+ and Cr6+ increases with the increase in pH value and a contact time of 60 min was found to be optimum. The effect of concentration shows that fruit shell substrate can remove Co2+ and Cr6+ ions from water.

Keywords: Adsorption, Capacity, Chromium(VI), Co(II), Cobalt(II), Contact Time, Cr(VI), Ferronia Elefuntum, Ferronia Elefuntum Fruit Shell, Fruit Shell Substrate, pH, Removal, Sorption, Water

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Full Text: 2005\Asi J Che17, 2757.pdf

Abstract: The purpose of this study was to determine the zinc adsorption and desorption characteristics and their relationships with some soil properties in semi-arid regions of Tokat, Turkey. Zinc adsorption data of the studied soils fitted into the linear form of Langmuir, Freundlich and Temkin isotherms, but the fit to Freundlich and linear Langmuir model were statistically better than the Temkin model. The mean distribution coefficients (K-d) of the soils ranged from 414 to 1001 and the higher Kd values were calculated at soils having higher clay and CaCO3. Similarly, the Zn adsorption maximum exceeds cation exchange capacity values of the soils high in clay and CaCO3. This could be attributed to adsorption on the internal surface of clay and precipitation of the applied Zn to the soils. Besides, recovery values (%) by DTPA of the retained Zn on the soils having higher clay and CaCO3 contents were lower than those of the other soils. According to the observed findings, clay and CaCO3 contents at the soils are the most important soil properties affecting adsorption and desorption of Zn.

Keywords: Adsorption, Adsorption Isotherms, Calcareous Soils, Capacity, Cation Exchange, Cation Exchange Capacity, Clay, Copper, Desorption, Exchange, Freundlich, Iran, Iron-Oxide, Isotherms, Langmuir, Langmuir Model, Manganese, Model, pH, Soil, Soils, Temkin, Turkey, Zinc, Zinc Adsorption And Desorption

? Mahramanlioglu, M., Guclu, K. and Misirli, T. (2006), Removal of Chromium(III) by the adsorbents produced from coal mining wastes. *Asian Journal of Chemistry*, **18** (1), 145-154.

Full Text: 2006\Asi J Che18, 145.pdf

Abstract: The adsorption study of Cr(III) on the adsorbent produced from coal mining waste was carried out as a function of time, initial concentration and pH. The Lagergren equation was used to calculate the adsorption rate constant. The equilibrium data showed that the adsorption of Cr(Ill) obeyed the Langmuir and Freundlich isotherm equations. Based on the Langmuir isotherm constant it was shown that the adsorbent produced from coal mining waste was more effective compared to most of the other adsorbents. The maximum adsorption for Cr(111) was observed at pH 5.2. Column studies were also performed to simulate the industrial conditions and column capacities for each flow rate were determined.

Keywords: Acid, Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption, Aqueous-Solution, Carbon, Chromium(III), Chromium(VI), Coal Mining Waste, Column, Cr(III), Elutrilithe, Equilibrium, Freundlich, Freundlich Isotherm, Isotherm, Lagergren Equation, Langmuir, Langmuir And Freundlich Isotherm, Langmuir Isotherm, pH, Pore Diffusion, Removal, Sorption, Spent Bleaching Earth, Transport, Water Treatment

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Full Text: 2006\Asi J Che18, 159.pdf

Abstract: Bioremediation of nickel and iron from artificially introduced solutions by various non-pathogenic microorganisms was tested. The concentration of metal used was 100 mg/L. Viable Pseudomonas species and Bacillus species could remove 56.24 and 56.8% of nickel, respectively. There was 11.1-96.86%. removal of iron by viable microorganisms, Aspergillus species with highest and Saccharomyces species with lowest percentage removal. The biosorption technique showed a range of 54.32-87.2% removal of nickel, with highest removal by Bacillus species. The biosorption of iron ranged from 60-100% with highest percentage removal by Aspergillus species. The percentage removal of nickel ranged from 54.8-92.4 and iron removal ranged from 73-95.68% by immobilization technique. The results of the present study indicate that these microorganisms are potential to remove nickel and iron from polluted waters, soils, industrial effluents, agricultural and municipal wastes.

Keywords: Bioremediation, Biosorption, Immobilization, Industrial Effluents, Iron, Microorganisms, Nickel, Nonpathogens, Phytoremediation, Removal, Soils

? Elizabeth, K.M. and Begum, A. (2006), Bioremediation of nickel and iron from solutions by viable, killed and immobilized microorganisms. *Asian Journal of Chemistry*, **18** (1), 186-190.

Full Text: 2006\Asi J Che18, 186.pdf

Abstract: Bioremediation of heavy metals such as nickel and iron from artificially introduced solutions was tested. The microorganisms used in this study were Bacillus (BS5), Nitrosomonas, Bacillus (BS6) and Pencillium species. The metal ion concentration used was 100 mg/L. The bioremediation of these metals by live, killed and immobilized microorganisms was assessed. The sorbent concentration used was 5 mg/mL. There was highest percentage removal of Ni (92.5%) and Fe (92.2%) by viable Nitrosomonas species, indicating that it was a very potential microbe. Biosorption technique showed 20.8-84% removal of Ni and 65.7-100% removal of Fe by microorganisms used. There was 92.6% removal of Ni by Bacillus species and 97.8% by Penicillium species through immobilization technique. The effect of pH on bioremediation of these metals was also assessed. The results obtained were subjected to chi-square test and indicate that all the microorganisms and techniques used were efficient in the removal of Ni and Fe and can be used to remediate these metals from industrial, agricultural and domestic wastewaters.

Keywords: Bioremediation, Biosorption, Heavy Metals, Immobilization, Iron, Microorganisms, Nickel, Non-Pathogens, pH, Removal, Sorbent

? Elizabeth, K.M. and Rani, A.K. (2006), Bioremediation of ammonia and nickel from solutions by viable, killed and immobilized non-pathogenic microorganisms. *Asian Journal of Chemistry*, **18** (1), 217-222.

Full Text: 2006\Asi J Che18, 217.pdf

Abstract: Bioremediation of ammonia and nickel from artificially introduced solutions was determined by viable, killed and immobilized non-pathogenic microorganisms. The concentration of the metals used was 100 mg/mL. The concentration of sorbent used in biosorption technique was 5.0 mg/mL. The live Staphylococcus species could remove 90.7% of ammonia and 56.5% nickel at pH 7. It could remove 91.5% ammonia and 36% of Ni by biosorption and 95% ammonia and 74.3% Ni by immobilization technique indicating that it was a very potential microorganism that can remove ammonia very efficiently. There was highest percentage removal of ammonia (93.3%) by E. coli through immobilization. Live Bacillus species (BS1) could remove 78.3% ammonia and 61.4% Ni, 94.36% ammonia and 79.8% Ni by immobilization technique. Live Bacillus megaterium could remove 84.3% ammonia and 24.4% Ni, 100% ammonia and 79% Ni through biosorption technique at pH 7. The effect of pH on bioremediation was studied. The results were subjected to chi-square test to determine whether the percentage removal of these pollutants was significant or not. These results clearly indicate that bioremediation of ammonia and nickel was very efficient by all microorganisms used and they can be utilized in the treatment of industrial, agricultural and domestic wastes, where there was plenty of ammonia and nickel.

Keywords: Ammonia, Bioremediation, Biosorption, Immobilization, Microorganisms, Nickel, Non-Pathogens, pH, Removal, Sorbent, Treatment

? Narkhede, B.N., Rathod, S.D., Munde, A.S. and Chavan, F.R. (2006), Effect of sorption, repeated sorption and desorption on solubility and swelling of the polyester resins. *Asian Journal of Chemistry*, **18** (1), 447-454.

Full Text: 2006\Asi J Che18, 447.pdf

Abstract: Different series of Polyester resins were prepared by partially esterifying poly (vinyl alcohol) with different amounts of terephthalic, isophthalic salicylic and p-hydroxy benzoic acid chlorides. Solubility and swelling degree of these products in water have been evaluated. To study how the solubility and swelling of the products were affected by repeated sorption, sorption and desorption of the product of each series used for sorption once were carried out. The solubility (g/mL) and swelling degree (g/g) were calculated. When the resin is subjected to reported sorption and desorption, a part of resin dissolves in water every time and swelling degree of the undissolved resin varies over a very narrow range.

Keywords: Desorption, Isophthalic Acid, P-Hydroxy Benzoic Acid, Poly (Vinyl Alcohol), Resin, Salicylic Acid, Solubility, Sorption, Swelling, Swelling Degree, Terephthalic Acid, Water

? Sharma, N., Thakur, A., Shivhare, U.S. and Kaur, M. (2006), Kinetic and equilibrium studies of adsorption of Cu(II) ions on rice husk. *Asian Journal of Chemistry*, **18** (1), 615-620.

Full Text: 2006\Asi J Che18, 615.pdf

Abstract: The present work deals with the removal of copper ions from water by treatment with rice husk. The factors affecting adsorption such as pH, metal ion concentration and time of contact have been varied to obtain an optimum set of conditions for maximum adsorption. It has been observed that maximum adsorption (65%) occurs at pH 10 for a time of contact of 2 h in the concentration range 30-300 mg L-1. The removal is strongly hindered by the presence of a complexing agent such as EDTA. The adsorption data follows the Freundlich and Langmuir isotherm. The results obtained point towards the use of rice husk as a potential adsorbent for copper(H) ions. An attempt to study the kinetics shows that the adsorption of copper ions on rice husk follows first order kinetics as calculated by using the rate equation and confirmed by applying the Lagergren first order rate equation. A tentative mechanism has been proposed.

Keywords: Adsorbent, Adsorption, Aqueous-Solutions, Carbon, Copper, Copper(II) Ions, Cu(II), EDTA, Equilibrium, First Order Kinetics, Freundlich, Isotherm, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Low Cost Adsorbents, Metals, pH, Powder, Removal, Removal, Rice, Rice Husk, Treatment, Waste-Water, Water

? Kale, A.A., Deshmukh, M.R., Deshpande, N.R. and Kashalkar, R.V. (2006), Removal of Methylene Blue by agricultural waste of Cicer arietinum. *Asian Journal of Chemistry*, **18** (2), 1153-1158.

Full Text: 2006\Asi J Che18, 1153.pdf

Abstract: Two kinds of adsorbents were prepared from the agricultural waste of Cicer arietinum. Both adsorbents have good uptake capacity of methylene blue dye. It was observed that removal of dyes is dependent on concentration of the dye, time and amount adsorbent of material used.

Keywords: Adsorbent, Adsorbents, Adsorption, Agricultural Waste, Capacity, Dye, Dyes, Methylene Blue, Removal, Removal Cicer Arietinum

? Arora, H., Bhardwaj, S.S. and Sharma, B.D. (2006), Boron adsorption on benchmark soils of Punjab. *Asian Journal of Chemistry*, **18** (2), 1313-1320.

Full Text: 2006\Asi J Che18, 1313.pdf

Abstract: The adsorption reactions of boron in soils strongly influence the release and fixation of applied boron and, thus, decide the efficiency of boron fertilization. Adsorption behaviour of B was investigated for six soil series of Punjab varying in physical and chemical characteristics. Results reveal that, in general, the adsorption of B increased with increase in concentration of boron and decreased with increase in temperature. Adsorption data for boron fitted well to the Freundlich isotherm and K values were positively correlated with clay and calcium carbonate content and negatively correlated with electrical conductivity and organic carbon content of the soil. Boron adsorption data also fitted well to the Langmuir equation. The values of distribution coefficient K-d, partial molar free energy ((Delta G) over bar) change and supply parameter were also calculated.

Keywords: Adsorption, Boron, Calcium Carbonate, Carbon, Clay, Distribution Coefficient, Electrical Conductivity, Freundlich, Freundlich Isotherm, Growth, Isotherm, Langmuir, Langmuir Equation, Punjab, Soil, Soils, Sorption, Temperature

? Ghaffar, A., Aslam, M. and Orfi, S.D. (2006), Optimization of physio-chemical conditions for removal of copper(II) ions from industrial effluents using various sorbents. *Asian Journal of Chemistry*, **18** (3), 1853-1861.

Full Text: 2006\Asi J Che18, 1853.pdf

Abstract: Removal of copper(II) ions from industrial effluents using different adsorbents such as activated carbon, brick kiln ash, tea waste, Ravi river sand and eggshells was studied to optimize the physicochemical conditions for maximum removal. The range of pH, temperature and concentration was so adjusted that it covers the physicochemical conditions of actual waste generated from industrial facilities. The initial and final concentration of copper was measured by atomic absorption spectroscopy. The residual concentration of copper in wastewater after adsorption was less than 1.0 mg/L, the released limit given in National Environment Quality Standards (NEQS). Maximum sorption (96-97%) of Cu(II) ions on activated carbon was achieved with (125 mu m) particle size at 28 degrees C temperature, pH 7. Under optimized conditions and temperature range of 301-315 K, Delta H, Delta S and Delta G(301) K for 100 ppm solution are -16.09 +/-.02 to 85.46 +/- 0.47 kJ/mol, -41.20 +/- 0.07 to 246.93 +/- 0.98 J/mol and -4.53 +/- 0.62 to 11.26 +/- 1.2 kJ/mol respectively and for 150 ppm solution the thermodynamic entities are Delta H=-10.78 +/- 0.09 to 57.03 +/- 0.62 kJ/mol, Delta S = -22.75 +/- 0.32 to 162.99 +/- 2.03 J/mol and Delta G(301 K) = -3.79 0.4 to 8.15 0.9 kJ/mol. Based on this study, the removal efficiency of various sorbents may be enhanced by optimizing certain specified physiochemical conditions.

Keywords: Absorption, Activated Carbon, Adsorbents, Adsorption, Adsorption, Cadmium, Carbon, Copper, Copper(II), Cu(II), Environment, Indigenous Sorbents, Industrial Effluents, Industrial Release Limit, Optimization, pH, Physico-Chemical Conditions, Quality, Removal, Removal Efficiency, Sand, Sorption, Temperature, Thermodynamic, Wastewater

? Nasser, N.A., Musleh, S.M. and Derwish, G. (2006), Chemical and structural properties of titanium dioxide modified Jordanian zeolitic tuffs and their potential for the removal of phenolics in aqueous media. *Asian Journal of Chemistry*, **18** (3), 1919-1934.

Full Text: 2006\Asi J Che18, 1919.pdf

Abstract: Titanium dioxide was deposited on the native Jordanian zeolitic tuff., XRF, XRD, SEM and FTIR techniques were used to characterize the chemical and structural properties of modified and unmodified samples. The zeolithic tuff supported titanium oxide was used in preliminary experiments to study their interaction with aqueous phenol solution under thermal and photochemical conditions, in the presence and absence of hydrogen peroxide. The results showed that titanium oxide has interacted with zeolitic tuff and caused some structural changes. These were reflected in the surface area of the samples and their activity in the phenol reactions.

Keywords: Adsorption, Alkylation, Ftir, Hydrogen Peroxide, Hzsm-5, Modification, Phenol, Phenolics, Phenols, Removal, Sem, Surface Area, Titanium, Titanium Dioxide, Titanium Oxide, Xrd, Xrf, Zeolitic Tuff

? Ismaeel, A.R. (2006), Prediction of isotherm concerning dual competitive and enhancing action of chloride ion on benzotriazol adsorption on heterogeneous steel surface. *Asian Journal of Chemistry*, **18** (3), 2081-2088.

Full Text: 2006\Asi J Che18, 2081.pdf

Abstract: Adsorption of benzotriazol on steel surface from hydrochloric acid solutions was studied indicating decrease of corrosion inhibition effectiveness and surface coverage as hydrochloric acid concentration increases. Considering competitive action of chloride ions with benzotriazol molecules for adsorption on steel, Jaroniec adsorption isotherm for adsorption of two components of different molecular sizes on heterogeneous solids is not applicable to our results except at high benzotriazol concentrations and could not explain experimental behaviours. An adsorption isotherm concerning enhancing and competitive action of chloride ion on benzotriazol adsorption is predicted, which is applicable to and explains experimental results.

Keywords: Adsorption, Adsorption Isotherm, Benzotriazol Adsorption Isotherm, Copper, Corrosion, Corrosion Inhibition, Corrosion-Inhibitor, Hydrochloric Acid, Inhibition, Isotherm, Molecules, Steel, Steel Surface

? Baghriche, O., Djebbar, K., Sehili, T., Rouag, D. and Bouchoul, A. (2006), Kinetic study of Methylene Blue on activated charcoal: Influence of pH and salts on retention capacity. *Asian Journal of Chemistry*, **18** (3), 2136-2144.

Full Text: 2006\Asi J Che18, 2136.pdf

Abstract: Methylene blue a cationic dye could be fixed on activated charcoal. Batch experiments conducted in aqueous medium have shown a very high affinity of this compound to this adsorbent. Indeed the percentage of retention of this dye (250 ppm) has reached 99% for a reaction time less than 30 min. and for concenL-ation of this support, 1 g/L. Changes in initial concentration of this substrate have led to variations in the capacity of retention, this latter increases as the concentration of the dye increases. The influence of salts like NaCl and Na2SO4 on capacity of retention has shown no effect either on capacity of adsorption or rate of adsorption. Identical results have been obtained with pH in both acidic and basic media. On the other side, solid/liquid ratio has shown no optimization on absorption process. The experimental results are well represented by Langmuir model. It is permitted to calculate the maximal capacity of retention which was about 338 mg/g of adsorbert. The kinetics of adsorption do not obey the Lagergrien model, proving that mass transfer at the liquid/solid interface proceeds throughout a more complex kinetics.

Keywords: Absorption, Activated Charcoal, Adsorbent, Adsorption, Aqueous Medium, Basic Dye, Batch Experiments, Capacity, Carbon, Cationic, Charcoal, Complex, Dye, Kinetic, Kinetics, Langmuir, Langmuir Model, Mass Transfer, Methylene Blue, Model, Nacl, Optimization, Parameters, pH, Photocatalytic Degradation, Removal, Retention, Salts, Silica, TiO2, Waste-Water

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Full Text: 2006\Asi J Che18, 2501.pdf

Abstract: Studies on removal of cobalt from aqueous solution by adsorption on granular activated carbon in combination with 3,5-dinitrosalicylic acid have been carried out at temperature 25 +/- 0.5 degrees C. The adsorption isotherm of cobalt on granular activated carbon has been determined and the data fitted reasonably well to the Langmuir and Freundlich isotherm for activated carbon.

Keywords: Activated Carbon, Adsorption, Adsorption, Adsorption Isotherm, Carbon, Cobalt, Freundlich, Freundlich Isotherm, Granular Activated Carbon, Isotherm, Langmuir, Langmuir And Freundlich Isotherm, Removal, Temperature

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Full Text: 2006\Asi J Che18, 2645.pdf

Abstract: A study of the rates of diffusion could throw light on the type of diffusion operative in the adsorption process of ligands used in this work by the granular activated carbon. Irk this work, a series of structurally related ligands based on oxine. have been studied which shows that surface diffusion phenomenon is operative.

Keywords: Activated Carbon, Adsorption, Carbon, Diffusion, Granular Activated Carbon, Ligand, Light, Oxine

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Full Text: 2006\Asi J Che18, 2650.pdf

Abstract: In the present work, pure kaolinite and that modified by HNO3, EDTA and HDTMA, were used as the adsorbents. The changes on the surfaces were studied by IR spectroscopy. The adsorption of solutions of phenol and phenol derivatives in alcohol on these adsorbents was examined by means of gas-chromatography. As a result of these examinations, it was seen that the adsorption capacities of the clay-organic complexes (kaolinite-EDTA and kaolinite-HDTMA) were higher than pure kaolinite and kaolinite-HNO3.

Keywords: Activated Carbon, Adsorbents, Adsorption, Aqueous-Solution, Chlorophenols, Clay, EDTA, Hdtma, Ir Spectroscopy, Kaolinite, Montmorillonite, Nitrophenol, Phenol, Phenol Derivatives, Smectites, Surfaces

? Narkhede, B.N., Rathod, S.D., Munde, A.S. and Chavan, F.R. (2006), Swelling of the polyester-resins by sorption with reference to water, NaCl, Cu(II) and urea solution as swelling agents. *Asian Journal of Chemistry*, **18** (4), 2680-2690.

Full Text: 2006\Asi J Che18, 2680.pdf

Abstract: Series of polyester-resins prepared by partially esterifying poly(vinyl alcohol) (PVA) with different acid chlorides, such as terephthalic (TPA), isophthalic (IPTA), salicylic (SAA) and p-hydroxybenzoic (Hb) acid chlorides. Swelling of these products in water, dilute solutions of NaCl, copper sulphate, i.e., Cu(II) and urea have been studied. The solubilities (g/mL) and swelling degree (g/g) with reference to above solvents as swelling agents were calculated. Also the degree of salting out of the polyester-resin from NaCl and Cu(II) solutions was calculated. Increase in hydrophilic groups increases swellable sites and hence swellability of the products. It was observed that salt was not sorbed by the resin during the sorption process and the presence of salt lowers the degree of swelling and solubility of the polyester-resins.

Keywords: Copper, Copper Sulphate., Cu(II), Isophthalic Acid, Nacl, Polyvinyl Alcohol, Resin, Salicylic Acid And P-Hydroxy Benzoic Acid, Solubility, Sorption, Swelling, Swelling Degree, Terephthalic Acid, Water

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Full Text: [2007\Asi J Che19, 233.PDF](2007/Asi%20J%20Che19,%20233.PDF)

Abstract: A batch adsorption system using insolubilized humic acid was investigated to remove Ni(II) from aqueous solutions in. single component system at different temperature and pH values and at constant ionic strength. The experimental data were fitted to the Langmuir, Freundlich and Redlich-Peterson isotherm models to obtain the characteristic parameter of each model, in order to determine the best fit isotherm for each system. The Redlich-Peterson model was found to well represent the measured adsorption data. The results, which were analyzed by the three models showed temperature and pH dependence. The derived adsorption constants (log a(L)) and their temperature dependence from Langmuir isotherm have been used to calculate the corresponding thermodynamic quantifies such as the free energy of adsorption, heat and entropy of adsorption. The thermodynamic data indicate that Ni(II) adsorption on to insolubilized humic acid is entropically driven and characterized by physical adsorption.

Keywords: Adsorption, Isotherm Models, Insolubilized Humic Acid, Nickel, Thermodynamic Quantities, Exchange Method, Metal-Ions, Heavy-Metals, Lead Ions, Tree Fern, Adsorption, Sorption, Kinetics, Equilibrium, Cu(II)

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Full Text: 2007\Asi J Che19, 307.pdf

Abstract: The object of the present investigation is to study the adsorption of acetic acid on Solarium nigrum. The effect of certain parameters on adsorption has been studied. Applicability of Fruendlich adsorption isotherm and Langmuir adsorption isotherm has been tested. Various thermodynamic parameters such as Delta G, Delta H and Delta S are reported. The adsorption power of Solanum nigrum is calculated. The experiments are carried out using batch adsorption process.

Keywords: Acetic Acid, Adsorption, Adsorption Isotherm, Batch, Isotherm, Langmuir, Langmuir Adsorption Isotherm, Solanum Nigrum, Thermodynamic, Thermodynamic Parameters

? Khosravan, M., Fatemi, S.J., Saljooghi, A.S. and Badiei, A. (2007), Synthesis, characterization and adsorption of metal ions on new silica-gel organofunctionalized compound. *Asian Journal of Chemistry*, **19** (2), 1131-1136.

Full Text: 2007\Asi J Che19, 1131.pdf

Abstract: Silica gel chemically modified with organic groups is widely used as an adsorbent for metal ions. In this investigation, silica gel was chemically modified with 3-chloropropyltrimethoxysilane and reacted with 2-aminothiophenol in order to yield an aromatic group immobilized on the silica gel surface and produced a compound for adsorbing Fe3+, Co2+, Ni2+, Cu2+, Zn2+, Cd2+, Tl+ and Tl3+ ions, which prepared in buffer solution at physiological pH. The characterization of new compound and its capability towards extraction of the above metal ions were studied and evaluated by a batch method. This compound showed high performance toward Fe3+ extraction, where its adsorption determined to be 98.1%. The order of increasing the metal ions uptake process satisfactorily coincides with increasing the hardness of these metal ions.

Keywords: Adsorbent, Adsorption, Batch, Characterization, Cu2+, Extraction, Fe3+, Hard, Level, Metal Ions, Modified Silica Gel, Ni2+, pH, Preconcentration, Separation, Silica, Silica Gel, Solid-Phase, Surface, Surface Adsorbent, Synthesis, Water

? Başıbüyük, M., Savci, S., Keskinkan, O. and Cakmak, M.E. (2007), Investigation of a basic dye adsorption characteristics of a non-living submerged aquatic plant (Myriophyllum spicatum). *Asian Journal of Chemistry*, **19** (3), 1693-1702.

Full Text: [2007\Asi J Che19, 1693.PDF](2007/Asi%20J%20Che19,%201693.PDF)

Abstract: In this paper, the adsorption properties of Myriophyllum spicatum (Eurasian watermilfoil) for a basic dye (basic blue 41) were investigated as a biosorbent and the results were compared with other biosorbents. Data obtained from the initial batch adsorption studies have indicated that dried M. spicatum is capable of removing basic blue 41 from the solution. The dye biosorption was fast and equilibrium was attained within 20 min. Data obtained from further batch Studies applied to Langmuir and Freundlich Models. High correlation coefficient with Linearized Langmuir Model was observed, however, negative q(max) value was observed indicating the inadequacy of Langmuir model. High correlation coefficient was also obtained with application of linearised form Freundlich model and it was found more suitable for the dye plant system. The kinetics of adsorption of basic blue were also analyzed and rate constants were derived for various dye concentrations. Initial part of the adsorption was found to be governed by film diffusion process. It was also found that the overall adsorption process was best described by the pseudo second order kinetics. Gibbs free energy value was found to be -2.2793 kJ and indicating the spontaneity of the system. The results showed that this Submerged aquatic plant H. spicatum can be successfully used for the removal of basic blue 41.

Keywords: Aquatic Plants, Biosorption, Basic Dye, Freundlich Model, Pseudo Second Order, Heavy-Metal Adsorption, Water Hyacinth Roots, Aqueous-Solutions, Activated Carbon, Methylene-Blue, Solid-Waste, Removal, Biosorption, Biomass, Sorption

? Alkan, S. (2007), Adsorption of catalase enzyme on silica gel. *Asian Journal of Chemistry*, **19** (3), 1819-1824.

Full Text: 2007\Asi J Che19, 1819.pdf

Abstract: Immobilization of catalase enzyme on fibrous silica gel was investigated in present study. Simple adsorption has no effect on enzyme activity and appeared to as a new method of immobilizing the enzyme at high ionic strength. The storage stability and the kinetic parameters of immobilized enzyme and its activity were evaluated under varied pH, ionic strength and temperature. These studies indicate that silica gel is a valuable support for simple adsorption of enzymes.

Keywords: Adsorption, Catalase, Clay-Supported Enzymes, Enzyme Immobilization, Enzymes, Immobilization, Kinetic, pH, Silica, Silica Gel, Stability, Temperature

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Full Text: [2007\Asi J Che19, 2211.PDF](2007/Asi%20J%20Che19,%202211.PDF)

Abstract: Removal of Cu(II), Zn(II), Cd(II) and Cr(III) from aqueous solutions by sorption on the clay from south west region of Anatolia was investigated. Experiments were carried out as a function of solution pH (2-8), initial solute concentration (1×10-4 - 1×10-3 mol/L), temperature (20-65°C), amount of adsorbent dosage (0.1-0.9 g) and time (5-2880 min) by batch process. Sorption characteristics of montmorillonite were evaluated by using Freundlich, Langmuir and Dubinin-Radushkevisch (D-R) adsorption isotherms. X-Ray diffraction, FTIR, SEM and elemental analysis were performed for characterization of clay. Concentrations of heavy metals in solution are determined by flame atomic absorption spectrometry.

Keywords: Clay, Heavy Metals, Langmuir Isotherm, Freundlich Isotherm, Dubinin-Radushkevisch Model, Ion-Exchange, Brown Coals, Sorption, Clinoptilolite, Cr(III), Resins, pH, Chromium(III), Equilibrium, Isotherms

? Mahani, F.S. and Taher, M.A. (2007), Application of 1-(2-pyridylazo)-2-naphthol for separation and preconcentration of trace amounts of cobalt(II) in various samples and its determination by flame atomic absorption spectrometry. *Asian Journal of Chemistry*, **19** (4), 2541-2549.

Full Text: 2007\Asi J Che19, 2541.pdf

Abstract: An atomic absorption spectrometric method for the determination of trace amounts of cobalt(II) after adsorption of its 1-(2-pyridylazo)-2-naphthol (PAN) complex on microcrystalline naphthalene has been developed. This complex is adsorbed on microcrystalline naphthalene in the pH range 3.0-6.0 from a large volumes of aqueous solutions of various alloys and biological samples. After filtration, the solid mass consisting of the cobalt complex and naphthalene was dissolved with 5 mL of dimethyl formamide and the metal was determined by flame atomic absorption spectrometry. Cobalt can alternatively be quantitatively adsorbed on [1-(2-pyridylazo)-2-naphthol]naphthalene adsorbent packed in a column and determined similarly. About 0.35 mu g of cobalt can be concentrated in a column from 500 mL of aqueous sample, where its concentration is as low as 0.7 ng/mL. Eight replicate determinations of 1.0 mu g/mL of cobalt in final DMF solution gave a mean absorbance of 0.071 with a relative standard deviation of 1.6%. The sensitivity for 1% absorption was 62 ng/mL in final DMF solution. The interference of a large number of anions and cations has been studied and the optimized conditions developed were utilized for the trace determination of cobalt in various alloys and biological samples.

Keywords: 1-(2-Pyridylazo)-2-Naphthol, 2-(5-Bromo-2-Pyridylazo)-5-Diethylaminophenol, 3rd-Derivative Spectrophotometry, Absorption, Adsorbent, Adsorption, Aqueous Solutions, Atomic Absorption Spectrometry, Biological Samples, Cobalt, Cobalt(II), Column Method, Complex, Enrichment, Ion-Pair, Lead, Microcrystalline Naphthalene, Molybdenum, Naphthalene, pH, Preconcentration, Separation, Spectrophotometric Determination, Tetraphenylborate

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Full Text: 2007\Asi J Che19, 3023.pdf

Abstract: The adsorption of Cr(VI) onto polyaniline/pumice(PAn/Pmc) composite has been investigated by using a batch method at room temperature and its adsorption properties was compared with PAn and Pmc. Cr(VI) adsorption was studied under different conditions (pH, time, initial Cr(VI) ion concentration, adsorbent amount and temperature) on PAn, Pmc and PAn/Pmc. The results of adsorption were fitted to both the Langmuir and Freundlich models and coefficients indicated avourable adsorption of Cr(VI) on the adsorbents. Adsorption of Cr(VI) solution was in order : PAn > PAn/Pmc > Pmc. Data from this study proved that the Cr(VI) adsorption from aqueous solutions amounts by polyaniline and its composite with pumice. The adsorption capacity of Pmc, PAn and PAn/Pmc were found as 0.42, 111.56, 0.77 and 0.05, 0.44, 0.18 for Freundlich and Langmuir adsorption isotherms, respectively. The thermodynamic parameter (free energy change, Delta G) for the adsorption has been evaluated. The sorption of Cr(VI) onto the adsorbents followed reversible first-order rates kinetics.

Keywords: Adsorbent, Adsorbents, Adsorption, Adsorption, Adsorption Capacity, Adsorption Isotherms, Aqueous Solutions, Aqueous-Solution, Batch, Capacity, Chromium(VI), Composite, Cr(VI), Cr(VI) Adsorption, Cu(II), Exchange-Resins, Freundlich, Freundlich And Langmuir Adsorption Isotherms, Hexavalent Chromium, Isotherms, Kinetics, Langmuir, Models, pH, Phosphate, Polyaniline, Pumice Powder, Pumice Powder, Removal, Sawdust, Sorption, Temperature, Thermodynamic

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Full Text: 2007\Asi J Che19, 3325.pdf

Abstract: Bentonite collected from Zaghouan (Middle East Tunisia) was reacted with boiling 3M HCl solution at 0.5, 2, 4 and during 6 h. The structural change was Studied, cation exchange capacity (CEC) decreased with the increase of the time treatment while specific surface area increase and it’s maximum value was attained by the sample treated at 4 h. The chemical and structural characteristics of the purified natural and modified clays were determined. The amount of iron, aluminum and magnesium compounds decreased in the modified clay. Use of purified and modified bentonite clay by HCl (3M) for the removal of some heavy metals (Zn, Pb, Ni) from aqueous solutions has been investigated. They are the most impurities of industrials effluents. The uptake capacity of the modified clay for nickel, zinc and lead did significantly decrease with increase of the time treatment. The sorption process is reflected by Langmuir and Freundlich-type isotherm. The order of the removal capacity is Pb2+ > Zn2+ > Ni2+ for both natural and treated sorbents. Equilibrium modeling of the adsorption showed that the adsorption of these three metals was fitted to a Freundlich isotherm in all cases.

Keywords: Acid Activation, Adsorption, Adsorption Isotherms, Aqueous Solutions, Bentonite, Capacity, Cation Exchange, Cation Exchange Capacity, Clay, Compounds, Equilibrium, Exchange, Freundlich, Freundlich Isotherm, Freundlich Model, Heavy Metals, Iron, Isotherm, Langmuir, Langmuir Model, Lead, Modeling, Modified Clays, Montmorillonite, Ni2+, Nickel, Pb2+, Removal, Sorption, Surface Area, Treatment, Zinc

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Full Text: 2007\Asi J Che19, 3493.pdf

Abstract: The possibility of using Jordanian natural zeolite (JNZ) as non-treated have been investigated for removing of Fe 3 from a model solution of (1000 ppm) at a correlation of liquid to solid phases, v:g = 50: 1. It has been found out that the specific surface of zeolite takes leading part at the adsorption of Fe3+ from the aqua solution with different concentrations. The thermodynamics of adsorption has been described with the most appropriate isotherms uptake of Fe3+ using zeolite. The adsorption of Fe3+ equilibrium isotherm, which is constructed at 20, 30, 40, 50 degrees C is studied at a constant percentage of 1 % HNO3 model solution and the ratio of sorbate to sorbent are identified. The methods of working are studied, along with their physical and chemical properties of the material towards magnetic properties of sorbate and electrical conductivity of the remaining sorbent solution.

Keywords: Adsorption, Aqueous-Solutions, Electrical Conductivity, Equilibrium, Fe3+, Ion-Exchange, Iron, Isotherm, Isotherms, Jordanian Natural Zeolite, Metal-Cations, Model, Na-Y Zeolite, Removal, Sorbent, Thermodynamics, Zeolite

? Murthy, C.V.R., Kumar, K.K., Jayaraju, K. and Silas, S. (2007), Biosorption studies for removal of cadmium from wastewater using immobilized Saccharomyces cerevisiae. *Asian Journal of Chemistry*, **19** (5), 3502-3510.

Full Text: 2007\Asi J Che19, 3502.pdf

Abstract: Biosorption process has been proposed as an efficient. potential, cost effective way of removing toxic metals from industrial effluents at low concentration of below 100 ppm. In the present study a new biosorbent material a waste product from breweries containing yeast, Saccharomyces cerevisiae, was immobilized and was used as an absorbent for removal of cadmium, as yeasts are capable of accumulating various heavy metals. Studies on the removal of cadmium from aqueous solutions using Saccharomyces cerevisiae immobilized in 4% sodium alginate beads were undertaken. Adsorption was carried out using free cells, immobilized beads in presence and absence of biomass. The results indicate that the amount of cadmium adsorbed increases with increase in metal concentration and decreased with decrease in pH. Increase in sodium alginate concentration increased in the metal adsorption. The equilibrium data was, fitted to Freundlich type of equation in all cases of present study. Finally an empirical correlation was proposed to estimate the equilibrium distribution of cadmium between immobilized biomass and aqueous solution.

Keywords: Adsorption, Algae, Aqueous Solutions, Beads, Biomass, Bioremediation, Biosorbent, Biosorption, Cadmium, Cadmium Removal, Cost, Equilibrium, Freundlich, Heavy Metals, Immobilized Yeast, Industrial Effluents, Metal Adsorption, pH, Removal, Saccharomyces Cerevisiae, Surface, Wastewater

? Anbia, M., Rofouei, M.K. and Husain, S.W. (2007), Mesoporous lanthanum tungstate as a novel sorbent for removal of heavy metal ions from aqueous media. *Asian Journal of Chemistry*, **19** (5), 3862-3868.

Full Text: 2007\Asi J Che19, 3862.pdf

Abstract: A supramolecular templating approach to the preparation of mesoporous lanthanum tungstate using lanthanum nitrate and dodecyl sulfate following digestion in sodium tungstate solution is presented. N-2 adsorption-desorption measurements have been made to determine the surface area and pore size. Calcined and uncalcined materials have been used to study the sorption behaviour of Cr(III), Cr(VI), Mn(II), Fe(Ill), Co(II), Ni(II), Cu(II), Zn(II), Ag(l), Cd(ll), Hg(II), Tl(I) and Pb(II) ions and methyl mercury from aqueous solution.

Keywords: Adsorbents, Adsorption, Co(II), Cr(III), Cr(VI), Cu(II), Heavy Metal, Heavy Metal Ions, Hg(II), Lanthanum Tungstate, Mesoporous, Metal Ions, Methyl Mercury Sorption, Mn(II), Nitrate, Organic Pollutants, Pb(II), Phenol, Pore, Removal, Silica, Solubilization, Sorbent, Sorption, Surface Area, Surfactant, Water

? Karatas, M. (2007), Removal of cadmium from water using clinoptilolite. *Asian Journal of Chemistry*, **19** (5), 3963-3970.

Full Text: 2007\Asi J Che19, 3963.pdf

Abstract: The present study examined the use of clinoptilolite for the removal of cadmium from aqueous solutions. The effects of pH and contact time on the adsorption process were examined. The optimum pH for adsorption was found to be 5.0. A decrease in the clinoptilolite concentration with a constant cadmium concentration or an increase in the cadmium concentration with a constant clinoptilolite concentration, increased cadmium loading per unit weight of the adsorbent. As a result, the maximum removal efficiency levels obtained were as follows; 95.32% for the clinoptilolite at pH 5.0 and contact time 15 min.

Keywords: Adsorbent, Adsorption, Adsorption, Aqueous Solutions, Cadmium, Clinoptilolite, Contact Time, Copper, Exchange, Heavy-Metal Removal, Ion, pH, Removal, Removal Efficiency, Sorption, Water, Weight, Zeolite

? Boukhalfa, C., Mennour, A., Reinert, L., Dray, M. and Duclaux, L. (2007), Removal of copper from aqueous solutions by coprecipitation with hydrated iron oxide. *Asian Journal of Chemistry*, **19** (6), 4267-4276.

Full Text: 2007\Asi J Che19, 4267.pdf

Abstract: The coprecipitation of Cu(II) ions with hydrated iron oxide in aqueous solution was studied using batch experiments by varying pH, iron and copper concentrations and [Cu(II)]/ [Fe(Ill)] molar ratio and also in the presence of competing ions. Analytical methods for solids analysis were performed to characterize the interaction of copper with the surface of the hydrous oxide. The uptake of Cu(II) showed typical cationic-type behaviour. The effect of the molar ratio was shown to depend on the copper concentration at high concentrations anomalous behaviour was observed. In the presence of Pb(II) and Zn(II), the Cu(II) removal was slightly decreased, whereas, it was enhanced in the presence of SO42-.

Keywords: Adsorption, Analysis, Aqueous Solutions, Batch, Cd, Copper, Coprecipitation, Cu, Cu(II), Goethite, Hydrated Iron Oxide, Iron, Metals, Pb, Pb(II), pH, Removal, Sorption, Sulfate, X-Ray Diffraction

? Benturki, O.S. and Addoun, F. (2007), Use of activated carbons for treatment of water polluted by the phenolic substances. *Asian Journal of Chemistry*, **19** (6), 4523-4532.

Full Text: 2007\Asi J Che19, 4523.pdf

Abstract: The activated carbons of different structures were prepared from a drift lignocellulosic of an Algerian jujube shells. The used precursors were heated at 475, 650 and 800 degrees C, in presence of an activating chemical agent. The porosity characterization of the activated carbons obtained, was investigated by BET method. Their application to the environment was studied for the treatment of polluted water by the phenol and the p-cresol. The influence of various parameters such as agitation time, phenolics concentrations, pH and temperature was studied. The Langmuir model was used to describe the experimental results. The results show the role, of the activating chemical agent in the porosity development of materials, by increase of their power adsorbent. It was found that more than 90 % of the phenolic products used in water as pollutants were eliminated by activated carbons. The adsorption was maximum in the pH range 6.2-6.8. The negative values of Delta H confirm the exothermic nature of adsorption.

Keywords: Activated Carbon, Activation, Adsorbent, Adsorption, Adsorption, Bet, Characterization, Development, Drift Lignocellulosic, Environment, Langmuir, Langmuir Model, Model, pH, Phenol, Phenolics, Porosity, Removal, Temperature, Treatment, Water

? Khatamian, M. and Dolatyari, M. (2007), Synthesis and characterization of HS, X and HS + X type zeolites from kaolin and the study of their ion exchange capacity for Cu2+, Ni2+ and Co2+. *Asian Journal of Chemistry*, **19** (7), 5199-5210.

Full Text: 2007\Asi J Che19, 5199.pdf

Abstract: HS, X and HS + X type zeolites are synthesized from kaolin clay having a large amount of impurities such as quartz (39 %) by hydrothermal treatment with NaOH in presence of sodium chloride. The zeolites are crystallized under the optimum hydrothermal conditions and characterized by XRD, FT-IR spectroscopy, BET surface area and SEM-EDS methods. The effects of aging time, crystallization time and crystallization temperature in synthesis of these zeolites are also investigated. Cation exchange capacity (CEC) of X, HS and X + HS (mixed crystallized) zeolites for Cu2+, Ni2+ and Co2+ were determined that they act selectively for exchanging of Cu2+ cation: The cation exchange capacity of these zeolites for mentioned cations were increases as follows: X + HS > X > HS. The XRD patterns of cation exchanged zeolites are also investigated.

Keywords: Bet, Bet Surface Area, Capacity, Catalysts, Cation Exchange, Cation Exchange Capacity, Characterization, Clay, Crystal-Structures, Cu2+, D2o Sorption Complex, Exchange, Ft-Ir, Ft-Ir Spectroscopy, Ftir, Ftir Spectroscopy, Hydrolysis, Hydrothermal, Ion Exchange, Kaolin, Ni2+, Pulsed-Neutron Diffraction, Surface Area, Synthesis, Temperature, Treatment, Xrd, Zeolite, Zeolite-Y

? Oualid, B., Kamel, D., Nadra, D., Tahar, S. and Abdelkader, B. (2007), Dicolouration of Congo red dye by activated carbon in aqueous medium. *Asian Journal of Chemistry*, **19** (7), 5319-5330.

Full Text: 2007\Asi J Che19, 5319.pdf

Abstract: Congo red an azoique dye could be fixed on activated carbon. Batch experiments conducted in aqueous medium, at room temperature (20 +/- 2 degrees C) and pH 6.55, have showed a low affinity of this compound towards this adsorbent mainly at elevated concentrations (100 ppm and more). This fact might be attributed to its azoique structure. However, at relatively feeble concentrations, we noticed a better fixation since ca. 70 % of the substrate was retained over activated carbon (1 g/L) for a reaction time of 80 min. Change in initial concentration of dye has led to variation in the retention capacity. The influence of salt such as, NaCl, Na2SO4 and NaHCO3, at various concentrations have showed no significant effect on rate and capacity of adsorption. The experimental results indicated that temperature affect rate and retention capacity. Adsorption isotherms have been correctly represented by Langmuir and Freundlich. The kinetics of adsorption was found to obey to the Lagergrein model, demonstrating that there is a mass transfer at the interface liquid/solid which is however slow since the apparent rate constant was equal about to 40 min(-1).

Keywords: Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Isotherms, Aqueous Medium, Azo-Dye, Batch Experiments, Capacity, Carbon, Concentration of Dye, Congo Red, Decolouration, Dye, Dyes, Freundlich, Isotherms, Kinetics, Langmuir, Mass Transfer, Model, Nacl, pH, Photocatalytic Degradation, Retention, Salts, Temperature, TiO2, Waste, Water

? Narkhede, B.N., Ingale, R.B., Rathod, S.D. and Rane, P.H. (2008), Effect of sorption, repeated sorption and desorption on solubility and swelling of the poly(vinyl alcohol) esters. *Asian Journal of Chemistry*, **20** (1), 86-90.

Full Text: 2008\Asi J Che20, 86.pdf

Abstract: Series of polyesters prepared by partially esterification of poly(vinyl alcohol) and with different acid chloride viz., anthranilic acid, amino acetic acid and p-amino benzoic acid chloride. Solubility and swelling of these products in water have been evaluated. To study how the solubility and swelling of polyesters were affected by sorption, repeated sorption and desorption of the product of each series used for sorption once were carried out. The solubility (g/mL) and swelling degree (g/g) were calculated. When polyester resin dissolves in water every time the swelling degree of the undissolved polyester resin varies over a narrow range.

Keywords: Acetic Acid, Acetic Acid,P-Amino Benzoic Acid, Amino, Anthranilic Acid, Desorption, Esterification, Poly(Vinyl Alcohol), Polyester-Resins, Resin, Solubility, Sorption, Swelling Degree, Water

? Narkhede, B.N., Ingale, R.B., Rathod, S.D. and Rane, P.H. (2008), Determination of molar solubility and swelling degree mole of the polyster polyols in water, saline, Cu(II) and urea solution as swelling agents. *Asian Journal of Chemistry*, **20** (1), 91-96.

Full Text: 2008\Asi J Che20, 91.pdf

Abstract: Previous works on poly(vinyl alcohol) (PVA) has effect on its swelling. Its hydroxyl groups have been studied as swollen elastic networks and as water sorbents. Various polymers have been prepared from PVA and different acids such as anthranilic acid, amino acetic acid and p-amino benzoic acid and studied for their solubility and swelling properties to correlate them with various structural factors. These polysterpolyols have been studied for solubility and swelling in water, saline, Cu(II) and urea solutions for the purpose of comparing solubility with structural characteristics. Molar solubility decreases with increase in hydroxyl groups. The swelling degree mole (g/g) is calculated, It was observed that, these values are increasing with increase in hydroxyl groups.

Keywords: Acetic Acid, Amino, Amino Acetic Acid, Anthranilic Acid, Cu(II), Determination, P-Amino Benzoic Acid, Poly(Vinyl Alcohol), Polyester-Resins, Polymers, Solubility, Sorption, Swelling Degree, Water

? Mahramanlioglu, M. (2008), Adsorption of beta-picoline on the adsorbents produced from spent bleaching earth. *Asian Journal of Chemistry*, **20** (2), 1444-1450.

Full Text: 2008\Asi J Che20, 1444.pdf

Abstract: The sorption of beta-picoline by acid treated spent bleaching earth was studied to examine the potentiality of this material in treatment systems. The effect of time, pH, initial concentration on the adsorption of beta-picoline was studied. Lagergren first order rate equation was used to describe the adsorption rate of beta-picoline and adsorption rate constants were calculated. Rate constants of intraparticle diffusion were calculated. Adsorption isotherms were modelled by the Langmuir equation and the isotherm constants of this isotherm were calculated. The dependence of the adsorption of P-picoline on the pH of the solution was studied to achieve the optimum pH value and a better understanding of the adsorption mechanism. The maximum adsorption was found to occur at pH 7.85. Giles isotherm was used and adsorption type was determined.

Keywords: Adsorbents, Adsorption, Adsorption Isotherms, Adsorption Mechanism, Agricultural Waste Materials, Aqueous-Solution, Beta-Picoline, Chromium, Diffusion, Equilibrium, Fluoride, Isotherm, Isotherms, Langmuir, Langmuir Equation, Mining Waste, Montmorillonite, pH, Pyridine, Pyridine-Derivatives, Removal, Sorption, Spent Bleaching Earth, Treatment

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Full Text: 2008\Asi J Che20, 1702.pdf

Abstract: In this study. attempts have been made to develop a low cost high-grade activated carbon from a woody material like Prosopis juliflora with inherent mechanical strength, high carbon and low ash content. Their physico-chemical characterization studies such as bulk density, moisture content. ash content, carbon content, matter soluble in water, matter soluble in acid, pH. iron content, surface area, pore specific volume and surface morphology have been carried out to assess the suitability of the plant (Prosopis juliflora) as precursor for manufacturing of activated carbon. The result obtained shows that this activated carbon can serve as a good adsorbent for the removal of both organics and inorganic.

Keywords: Activated Carbon, Adsorbent, Adsorption, Carbon, Characterization, Cost, Density, Iron, Low Cost Adsorbent, pH, Pore, Preparation, Prosopis Juliflora, Removal, Water

? Basaran, D. and Opak-Kara, Y. (2008), Biosorption method of removal of chromium(III) accumulated with Nastunium officinale in water. *Asian Journal of Chemistry*, **20** (3), 1937-1942.

Full Text: 2008\Asi J Che20, 1937.pdf

Abstract: In present studies, Nasturtium officinale was used as a biosorption plant to remove Cr3+ present in water. For these studies, 0.1, 0.3, 0.5, 1.0, 2.0, 3.0, 4.0 and 5.0 ppm solution of Cr3+ has been prepared in water. Nasturtium officinale was immersed in the experimental solutions for 24, 48 and 72 h. The general apperance of the plants have been observed before and after 24, 48 and 72 h. The plants have been analyzed with atomic absorption for measuring the concentration. The initial and final values of concentration of Cr3+ have been found by drawing the calibration lines in UV region. The wet weight has been measured with sensitive balance. The amount of Cr3+ absorption by plant has been calculated with the dependence of the wet weight.

Keywords: Absorption, Biomass, Biosorption, Calibration, Cr(III), Ions, Microorganisms, Nasturtium Officinale, Plants, Removal, Uv, Water, Weight

? Isildak, O. and Sari, A. (2008), Equilibrium and thermodynamic studies of stearic acid adsorption on sepiolite. *Asian Journal of Chemistry*, **20** (3), 2099-2104.

Full Text: 2008\Asi J Che20, 2099.pdf

Abstract: This study presents the equilibrium and thermodynamic parameters of-the adsorption of stearic acid on sepiolite as a function of temperature. The equilibrium data were applied to linear Langmuir and Freundlich models and the coefficients of determination (r(2) = 0.849-0.935 for linear Langmuir model and r(2) = 0.990-0.995 for linear Feundlich model), indicating that the second model was more applicable in the evaluation of equilibrium data at studied conditions. Thermodynamic parameters such as free energy (Delta G degrees), enthalpy (Delta H degrees) and entropy-of adsorption (Delta S degrees) were also calculated. These parameters revealed that the adsorption of stearic acid on sepiolite was feasible, spontaneous and exothermic in nature. On the basis of the. results, it can be concluded that the sepiolite has A considerable potential for removal of stearic acid from the main sources such as raw and edible soybean, sunflower and olive oils.

Keywords: Adsorption, Adsorption Isotherm, Aqueous-Solution, Equilibrium, Evaluation, Fatty-Acids, Freundlich, Isotherms, Langmuir, Langmuir Model, Model, Models, Removal, Rice Hull Ash, Sepiolite, Soybean, Stearic Acid, Temperature, Thermodynamic, Thermodynamic Parameters

? Bayari, O.R., Musleh, S.M., Tutungi, M.F. and Derwish, G.W. (2008), Bleaching of some vegetable oils with acid-activated Jordanian bentonite and kaolinite. *Asian Journal of Chemistry*, **20** (3), 2385-2397.

Full Text: 2008\Asi J Che20, 2385.pdf

Abstract: Acid activated Jordanian bentonites and kaolinites (employing hydrochloric, sulfuric, phosphoric and acetic acids) are used for the bleaching of corn, soybean and sunflower oils. The results showed that in general the Jordanian bentonites but not kaolinites, compared favourably with the industrial commercial bleacing earth. The sulfulric acid activated sample showing uniformly best bleachability property. Freundlich’s isotherms showed that the acid activated Jordanian bentonites displayed superior adsorption strength, but inferior adsorption capacity, when compared with commercial bleaching earths. This could be due to the low montmorillonite content but high acidity of the-activated Jordanian bentonites, which are therefore quite-suited for the initial bleaching of pigmented vegetable oils.

Keywords: Acid Activation, Adsorption, Adsorption Capacity, Bentonite, Capacity, Freundlich Isotherm, Isotherms, Kaolinite, Montmorillonite, Oil Bleaching, Soybean

? Polyakova, Y.L. and Row, K.H. (2008), Sorption and retention behaviours of benzene and some five-membered heterocycles on a porous graphitized carbon column. *Asian Journal of Chemistry*, **20** (5), 3663-3672.

Full Text: 2010\Asi J Che20, 3663.pdf

Abstract: The sorption on a porous graphitized carbon column was tested by using benzene and some five-membered heterocycles as a sorbates. The performance of five solutes with two types of eluents was examined. The influence of mobile phase modifier on the retention was discussed. The Langmuir isotherm was applied to describe the adsorption of substances on the surface of the graphitized adsorbent. The parameters of the adsorption isotherms were compared with different mobile phase compositions. The exponential curves of benzene, imidazole, indole and indoline are logarithmically increased in pure aqueous eluent, but 1,2,4-triazole had showed linear adsorption isotherm. The solubility, solvophobic effects and selective interactions between solute polarizable or polarized functional groups with graphite affect the sorption of substances.

Keywords: Adsorption, Adsorption Isotherm, Adsorption Isotherms, Benzene, Carbon, Competitive Adsorption-Isotherms, Complexes, Dipeptides, Five-Membered Heterocycles, Hypercarb, Ion-Pair Chromatography, Isotherm, Isotherms, Langmuir, Langmuir Isotherm, Packing Materials, Performance Liquid-Chromatography, Phase, Porous Graphitized Carbon, Retention, Separation, Sorption, Surface

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Full Text: 2010\Asi J Che20, 3767.pdf

Abstract: FT-IR spectroscopy has been used to characterize adsorption and interaction of 2-aminopyridine by loughlinite, which belongs to palygorskite-sepiolite group of phyllosilicates class of clay minerals. The spectroscopic results indicate generation of 2-aminopyridinium cations. Cationic and neutral surface species adsorbed on loughlinite are coordinated to Bronsted acidic sites and surface hydroxyls (by H-bonding interaction through pyridine ring nitrogen lone pairs), respectively. It must be noted that the adsorption of 2-aminopyridine affected the hydroxyl group vibrations of loughlinite.

Keywords: Adsorption, Aminopyridine, Aminopyridines, Clay, Clay Minerals, Ft-Ir, Ft-Ir Spectroscopy, Ftir, Ftir Spectroscopy, Intercalation, Ir Spectroscopy, Loughlinite, Model-Calculations, Montmorillonite, Nitrogen, Palygorskite, Pyridine, Sepiolite, Spectra

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Full Text: 2010\Asi J Che20, 4059.pdf

Abstract: The biosorption of commonly used reactive dye, reactive orange 16 (RO 16). from aqueous solutions by live (ILSq) and heat inactivated Scenedesmus quadricauda (IHISq) immobilized Scenedesmus quadricauda was studied in a batch system with respect to pH, temperature and biosorption time. The ILSq and IHISq exhibited the highest dye uptake capacity at 30 degrees C, the initial pH value of 2.0 and the initial dye concentration of 300 mg L-1. At 300 mg L-1 initial dye concentration in the batch system the adsorption capacity was determined as 88.4 mg g(-1) of dye biosorption for IHISq in 0.5 h. The adsorption capacity of ILSq was observed as 71.2 mg g(-1) in 0.5 h and 76.4 mg g(-1) and 82.8 mg g(-1) of dye biosorption within I and 3 h, respectively. The equilibrium concentration and the adsorption capacity at equilibrium were determined using four different sorption models i.e., Langmuir, Temkin, Flory-Huggins and Freundlich isotherm.

Keywords: Adsorption, Adsorption Capacity, Algae, Aqueous Solutions, Aqueous-Solution, Aspergillus-Foetidus, Batch, Biomass, Biosorption, Blue, Capacity, Dye, Equilibrium, Freundlich, Freundlich Isotherm, G Reactive Dye, Immobilized Scenedesmus Quadricauda, Ions, Isotherm, Isotherms, Kinetic, Kinetics, Langmuir, Models, pH, Reactive Dye, Reactive Orange 16, Removal, Rhizopus-Arrhizus, Sorption, System, Temkin, Temperature, Textile Dyes

? Surana, J. and Bhardwaj, S. (2008), Removal of dye stuff from industrial effluents using MnWO4 as semiconductor. *Asian Journal of Chemistry*, **20** (6), 4541-4544.

Full Text: 2010\Asi J Che20, 4541.pdf

Abstract: The bleaching of Eosin-Y was carried out in presence of semiconductor MnWO4. The source used for energy was visible light. Various parameters like amount of semiconductor, pH, light intensity, dye concentration, etc. were varied. A tentative mechanism is proposed.

Keywords: Adsorption, Bleaching of Dye, Concentration of Dye, Dye, Industrial Effluents, Light, pH, Pseudo First Order Rate Law, Removal, Semiconductor, Sun Light

? Raghuvanshi, S.P., Singh, R. and Kaushik, C.P. (2008), Adsorption of congo red dye from aqueous solutions using neem leaves as adsorbent. *Asian Journal of Chemistry*, **20** (7), 4994-5000.

Full Text: 2008\Asi J Che20, 4994.pdf

Abstract: A low cost absorbent prepared from neem leaves for the removal of congo red dye from aqueous solution has been studied. Experiments in batch reactor were carried out to study the removal efficiency of neem leaves towards the adsorption of congo red dye (adsorbate) by stirring it with neem leaves powder (adsorbent). Kinetics study of adsorption and equilibrium studies were carried out by varying different parameters like size of the adsorbent particles, initial concentration of dye and the adsorbent dosage. An adsorption rate model has been developed. The experimental data have also been studied in light of Langmuir and Fruendlich. Adsorption equilibrium data fit most satisfactorily to Langmuir adsorption isotherm.

Keywords: Adsorbent, Adsorption, Adsorption Equilibrium, Adsorption Isotherm, Aqueous Solutions, Batch, Concentration of Dye, Congo Red, Congo Red Dye, Cost, Dye, Equilibrium, Isotherm, Kinetics, Langmuir, Langmuir Adsorption Isotherm, Langmuir Isotherm, Light, Model, Neem Leaves, Removal

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Full Text: 2008\Asi J Che20, 5614.pdf

Abstract: The adsorption isotherms of glucose on barium sulphate crystallites in aqueous positively charged solution at room temperature was investigated by spectrophotometric method. The amount of glucose adsorbed (X) increases with the increasing of the equilibrium concentrations (C) which agrees well with Freundlich-Langmuir isotherms.

Keywords: Adsorption, Adsorption Isotherms, Barium Sulphate, Equilibrium, Glucose, Isotherms, Temperature

? Basibuyuk, M. (2008), Adsorption characteristics of acid dyes by the live activated sludge. *Asian Journal of Chemistry*, **20** (7), 5625-5634.

Full Text: 2008\Asi J Che20, 5625.pdf

Abstract: Adsorption is the one of the aspects of abiotic removal and in current work, the adsorption properties of two acid dyes by live activated sludge were examined in a batch system. The dyes tested for the adsorption by live activated sludge were Lanaset yellow 4GN and Lanaset red G. Both acid dyes adsorbed by the live activated sludge to some degree and the equilibrium was obtained with in 160 min. The data obtained from equilibrium studies fit to both Langmuir and Freundlich models. Based on the Langmuir model, q(ma)x values were found 69.48 and 144.91 mg/g for Lanaset yellow 4GN and Lanaset red G, respectively. Gibbs free energies of adsorption were also calculated and negative values were found for each dye and sludge system. Intraparticle diffusion was found significant for both dyes tested and overall adsorption process was best described by pseudo second order model. Rate constants for each of the model were also calculated.

Keywords: Abiotic Removal, Acid Dyes, Adsorption, Adsorption Isotherms, Adsorption Kinetics, Batch, Bioelimination, Biomass, Biosorption, Chemometric Approach, Diffusion, Dye, Dyes, Dyestuffs, Equilibrium, Freundlich, Heavy-Metal Adsorption, Intraparticle Diffusion, Langmuir, Langmuir Model, Model, Models, Removal, System, Waste-Water, Water-Soluble Dyes

? Singh, R., Raghuvanshi, S.P. and Kaushik, C.P. (2008), Defluoridation of drinking water using brick powder as an adsorbent. *Asian Journal of Chemistry*, **20** (8), 5818-5826.

Full Text: 2008\Asi J Che20, 5818.pdf

Abstract: Kinetics study in batch process to understand the feasibility and effectiveness of adsorbents brick powder were applied on aqueous samples prepared in laboratory and groundwater samples of higher fluoride concentration collected from two villages, namely Hussainpur and Thodwal of Haryana, India. Different parameters, for instance, effect of pH, effect of dose and contact time of adsorbent were studied and optimized. For the optimum condition i.e., pH (6-8) and dose of adsorbents (0.6- 1.0 g/100 mL), the percentage of defluoridation from aqueous (synthetic) sample, was found to,,e increase from 29.8 to 54.4 % for brick powder and 47.6-80.4 % for chemically activated carbon (CAC) with the increase in contact time of 15 to 120 min. Fluoride removal was found to be 48.73 and 56.4 % from goundwater samples having 3.14 and 1.21 mg/L fluoiride, respectively under the optimized conditions. Defluoridation capacity of brick powder can be explained on the basis of the chemical interaction of fluoride with the metal oxides under suitable pH conditions.

Keywords: Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption, Aluminum, Alzheimers-Disease, Batch, Brick Powder, Capacity, Carbon, Chemically Activated Charcoal, Contact Time, Defluoridation, Drinking Water, Earth, Fluoride, Fluoride Removal, India, Kinetics, pH, Removal, Water

? Lakzian, A., Berenji, A.R., Karimi, E. and Razavi, S. (2008), Adsorption capability of lead, nickel and zinc by exopolysaccharide and dried cell of Ensifer meliloti. *Asian Journal of Chemistry*, **20** (8), 6075-6080.

Full Text: 2008\Asi J Che20, 6075.pdf

Abstract: In this study, the adsorption capability of lead, nickel and zinc by exopolysaccharide (EPS) and dried cell of Ensifer meliloti (formerly Sinorhizobium meliloti) which nodulates alfalfa has been investigated. The results showed that dried cells had less adsorbing tendency compared to EPS of Ensifer meliloti MS-125. 0.02 g of EPS adsorbed 99, 85 and 66% of lead, nickel and zinc, respectively, presented in 50 mg L-1 solutions. Maximum adsorption of lead, nickel and zinc were 110, 54 and 94 mg g(-1) EPS, respectively, estimated by using Langmuir model.

Keywords: Adsorption, Beads, Biomass, Biosorption, Ca-Alginate, Ensifer Meliloti, Eps, Exopolysaccharide, Heavy Metals, Heavy-Metal Biosorption, Ions, Langmuir, Langmuir Model, Lead, Model, Nickel, Removal, Sinorhizobium Meliloti, Zinc

? Gupta, V., Agarwal, J., Sharma, M. and Solanki, P. (2008), Adsorption analysis of Mn(VII) from aqueous medium by natural polymer chitin and chitosan. *Asian Journal of Chemistry*, **20** (8), 6195-6198.

Full Text: 2008\Asi J Che20, 6195.pdf

Abstract: Batch experiments were carried out for the adsorption of Mn7+ ions on to natural polymer chitin and chitosan. Several variables viz, initial adsorbent concen-tration, pH, temperature and contact time were also evaluated. Equilibrium data were fitted to the Langmuir and Freundlich isotherm equation.

Keywords: Adsorbent, Adsorption, Analysis, Batch Experiments, Chitin, Chitosan, Contact Time, Deacetylated Chitin, Equilibrium, Freundlich, Freundlich Isotherm, Isotherm, Langmuir, Langmuir And Freundlich Isotherm, Mn(Vii), pH, Temperature

? Dursun, S., Guclu, D., Berktay, A. and Guner, T. (2008), Removal of chromate from aqueous system by activated red-mud. *Asian Journal of Chemistry*, **20** (8), 6473-6478.

Full Text: 2008\Asi J Che20, 6473.pdf

Abstract: In this investigation, red-mud which is the semi-waste of the Seydisehir Aluminium Factory in Turkey was used as an adsorbent material after activation processes. Firstly, the red-mud was treated with different concentration of HCl acid and was washed up with deionized water to clean the acid and other residues. Then, activate adsorbent was used in different doses and at the different pH values for each experimental test. Furthermore, optimum activated red-mud dosage was added in the water containing different chromate concentration. So, the capability of the red-mud for the chromate removal from the water was investigated. In the experiments, the chromate added tap water was used for synthetic water samples. About 70 % chromate removal efficiency was obtained by the optimum red-mud dose and pH value. This investigation indicated that waste of aluminium factories might be used for heavy metal removal processes from the water.

Keywords: Acid, Adsorbent, Adsorption, Adsorption, Aluminium, Chromate, Heavy Metal, Heavy Metals, Heavy-Metal, Hexavalent Chromium, Metal Removal, pH, Recycling, Red Mud, Removal, Sorbents, System, Treatment, Turkey, Waste, Water, Zn(II)

? Khan, M.R. and Bokhari, H. (2008), Immobilization of the protease of Carica papaya on activated charcoal. *Asian Journal of Chemistry*, **20** (8), 6582-6588.

Full Text: 2008\Asi J Che20, 6582.pdf

Abstract: Immobilization of the protease of Carica papaya was carried out on activated charcoal. A continuous immobilized enzyme proteolytic system was developed by packing a column with activated charcoal using citrate phosphate buffer pH 7.0. The percentage of immobilization was found to be 62.5 %. The column, of course. was partly chocked due to adsorption of casein with activated charcoal, which led to reduction in the flow rate. The life span of the enzyme immobilized on activated charcoal was 37 d.

Keywords: Activated Charcoal, Adsorption, Carica Papaya, Charcoal, Hydrolysate, Immobilization, Immobilized Protease, pH, Phenylalanine, Proteolysis, Reduction, Skim Milk, System

? Koyuncu, M. (2009), Adsorption of Maxilon Blue GRL from an aqueous solution: Equilibrium and kinetic studies. *Asian Journal of Chemistry*, **21** (1), 121-127.

Full Text: 2009\Asi J Che21, 121.pdf

Abstract: Removal of a basic dye, maxilon blue GRL by bentonite, from an aqueous solution was studied. The adsorption of the dye on to bentonite was investigated during batch adsorption experiments carried out to determine the effect of initial, dye concentration and contact time. The Langmuir and Freundlich isotherm models were tested for their applicability. Kinetic studies were conducted in two different temperatures and five different reaction periods. Adsorption stability studies were done with five different dye solutions at 37 degrees C, pH 4.5-5.0 and in 10 h stability periods and adsorption capacities, adsorption stability constants and Langmuir and Freundlich constants were calculated. The experimental data were analysed using the pseudo-first-order adsorption kinetic model. According to this model, the rate constants were evaluated for two different temperatures. The experimental data fit the first-order kinetic model.

Keywords: Adsorbent, Adsorption, Basic Dye, Basic Dyes, Batch, Bentonite, Contact Time, Dye, Dye Adsorption, Equilibrium, Freundlich, Freundlich Isotherm, Isotherm, Isotherm Models, Kinetic, Kinetic Model, Kinetic Studies, Kinetics, Langmuir, Langmuir And Freundlich Isotherm, Langmuir Model, Model, Models, pH, Removal, Waste-Water

? Farizadeh, K., Yazdanshenast, M.E., Montazert, M., Rashidi, A. and Malek, R.M.A. (2009), Thermodynamics of adsorption of Iranian weld dye on wool fabric. *Asian Journal of Chemistry*, **21** (1), 403-410.

Full Text: 2009\Asi J Che21, 403.pdf

Abstract: The adsorption properties of the colouing matter from Weld have studied on wool fabric. In this study, the rate of dyeing at different temperature as well as the values of adsorption isotherm, affinity, entropy and enthalpy were estimated. The results show that with increasing of temperature the values of partition ratio and affinity decrease. The suitability of the adsorbent was tested by fitting the adsorption data with Langmuir isotherm. The effect of alum was also studied on adsorption isotherm and resulted that the adsorption isotherm is similar to without alum.

Keywords: Adsorption, Adsorption Isotherm, Alum, Cotton, Dye, Dyeing, Isotherm, Lac, Langmuir, Langmuir Isotherm, Natural Dye, Natural Dyes, Reseda-Luteola l., Silk, Temperature, Thermodynamics, Weld, Wool, Wool Fabric

? Mahramanlioglu, M. and Ozgen, O. (2009), Adsorption of alpha-picoline and gamma-picoline on the adsorbent produced from spent bleaching earth. *Asian Journal of Chemistry*, **21** (1), 635-643.

Full Text: 2009\Asi J Che21, 635.pdf

Abstract: Adsorbents were produced from spent bleaching earth and the individual adsorption of alpha-picoline and gamma-picoline by them was studied as a function of time, pH and initial concentration. The adsorption process for both solutes followed the first order Lagergren equation and the rate constants of the adsorption were calculated for each solute. Rate constants of intraparticle diffusion were also calculated for each solute. The adsorption capacities were obtained from the Langmuir isotherm. In order to understand adsorption mechanism, Giles isotherm was used and adsorption type for each solute was determined. Maximum adsorption capacity was observed between pH: 8.13 and 8.77.

Keywords: Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Mechanism, Agricultural Waste Materials, Alpha-Picoline, Biodegradation, Capacity, Diffusion, Dilute Aqueous-Solution, Gamma-Picoline, Immobilized Pimelobacter sp, Isotherm, Lagergren Equation, Langmuir, Langmuir Isotherm, Montmorillonite, pH, Pyridine-Derivatives, Removal, Shale, Sorption, Spent Bleaching Earth

? Opak-Kara, Y., Basaran, D. and Isikalan, C. (2009), Studies on accumulation of Mn2+ by nasturtium officinale in water by biosorption. *Asian Journal of Chemistry*, **21** (2), 1176-1180.

Full Text: 2009\Asi J Che21, 1176.pdf

Abstract: In present study, Nasturtium officinale has been used as a plant. The plant has been collected from the campus of Dicle university. The study has been achieved in vitro. Air roots of the plant with the same number and morphology of leaf has been chosen. For biosorption of Mn2+ metal ions by Nasturtium officinale, the solutions were prepared as 0.1; 0.3; 0.5; 1; 2; 3; 4 and 5 ppm, respectively. Water samples has been prepared from 1000 ppm stock and put them to balon joje. After this process, the plants have been transferred to the erlens and wait for 24,48 and 72 h. The erlens have been tightly closed with parafilm. The general appearence of the plants have been observed at the beginning and after 24 h. The plants has been analyzed with atomic absorption spectrometry by receiving 2 mL of water samples for calculation of concentration. The A and B values have been found by drawing the calibration lines in UV. The wet weight has been measured with sensitive balance. The quantity of Mn2+ absorption of plants has been calculated with the dependence of the wet weight.

Keywords: Absorption, Accumulation, Atomic Absorption Spectrometry, Biomass, Biosorption, Calibration, Environmental Pollution, Heavy Metals, Ions, Leaf, Metal Ions, Microorganisms, Mn2+, Nasturtium Officinale, Plants, Removal, Uv, Water, Weight

? Rajasekhar, K.K., Babu, R.H., Veena, B.M., Lavanya, G., Haripriya, P. and Hamsini, K.V. (2009), Adsorption studies of Methylene Blue and Congo Red on the surface of *Citrus aurantium*. *Asian Journal of Chemistry*, **21** (2), 1531-1534.

Full Text: 2009\Asi J Che21, 1531.pdf

Abstract: The adsorption of organic dyes like methylene blue and congo red on Citrus aurantium using batch adsorption process has been investigated. The effect of certain parameters on adsorption has been studied. Applicability of Freundlich adsorption isotherm and Langmuir adsorption isotherm has also been tested.

Keywords: Adsorption, Adsorption Isotherm, Batch, Citrus Aurantium, Congo Red, Dyes, Freundlich, Isotherm, Langmuir, Langmuir Adsorption Isotherm, Methylene Blue

? Abuein, M.M. and Belazi, A.M. (2009), Biosorption of chromium(VI) and mercury(II) from aqueous solutions by *Eriobotrya japonica* (Rosaceae). *Asian Journal of Chemistry*, **21** (3), 1707-1712.

Full Text: 2009\Asi J Che21, 1707.pdf

Abstract: A method was developed to investigate the potential removal of chromium(VI) and mercury(II) from aqueous solutions through biosorption by Eriobotrya japonica (Rosaceae). The results obtained shows removal of Cr(VI) by 68.4 % and for Hg(II) by 97.4 % for 100 mg/L solutions of Cr(VI) and Hg(II), with biomass of 3 g. However, both solutions containing Cr(VI) and Hg(II) were reached the equilibrium within 1 h. The optimum pH value used for both elements was pH 5. The biosorption of Cr(VI) and Hg(II) was studied using FTIR. The spectra suggested that the presence of Cr(VI) ions in the biomass effects the bands corresponding to. the carboxyl groups. Similar result was achieved for Hg(II) ion at optimum pH 5. The results obtained by the method indicated that Eriobotrya japonica (Rosaceae) is appropriate material for biosorption of Cr(VI) and Hg(II).

Keywords: Adsorption, Aqueous Solutions, Biomass, Biosorption, Chromium(VI), Cr(VI), Equilibrium, Eriobotrya Japonica (Rosaceae), Ftir, Heavy-Metals, Hg(II), Mercury(II), pH, Removal, Waste, Water

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Full Text: 2009\Asi J Che21, 1886.pdf

Abstract: The adsorption behaviours of reactive brilliant blue K-NR adsorbed on silver mirror were studied using the surface-enhanced Raman scattering. The adsorptive mechanisms of reactive brilliant blue K-NR were discussed. The results indicated that silver could greatly enhance Raman scattering responses. The surface-enhance Raman scattering intensity of reactive brilliant blue K-NR varied its and blue K-NR concentration was adsorbed on silver mirror through electrostatic force and van der Waals force.

Keywords: Adsorption, Copper Electrode, Pyridine, Reactive Brilliant Blue K-Nr, Silver, Silver Mirror, Spectra, Surface-Enhanced Raman Scattering

? Zein, R., Suhaili, R., Mawardi, Munaf, E. and Bavestrello, G. (2009), Chemical modification of some functional groups on marine algae (*Sargassum crasifolium*) powder for the evaluation of lead(II) Uptake. *Asian Journal of Chemistry*, **21** (3), 2032-2036.

Full Text: 2009\Asi J Che21, 2032.pdf

Abstract: The functional group on marine algae (Sargassum crasifolium) has been modified using NaOH, formaldehyde and citric acid as a modifier. The modified or algae is used for the Pb(II) uptake. The experimental results showed that the modification of functional group on algae Sargassum crasifolium using NaOH much better than formaldehyde and citric acid, with the sorption capacity 1.25 mg Pb/g algae followed by 0.83 and 0.69 mg Pb/g algae powder for formaldehyde and citric acid modification, respectively.

Keywords: Algae, Binding, Biomass, Biosorption, Cadmium, Capacity, Chemical Modification, Formaldehyde, Heavy-Metals, Lead(II), Marine Algae, Modification, Pb Uptake, Pb(II), Sorption

? Munaf, E., Suhaili, R., Anwar, Y., Indrawati and Zein, R. (2009), Dynamic removal of toxic metals from wastewater using perlite as sorbent. *Asian Journal of Chemistry*, **21** (3), 2059-2066.

Full Text: 2009\Asi J Che21, 2059.pdf

Abstract: Expanded perlite has been used as an adsorbent for the effective removal of chromium, cadmium, copper and zinc from laboratory waste-water. The percent removal of toxic metals investigated at pH 6 were in the range of 75-90 % for Cr(III), Cu(II) and Zn(II). While Cd(II) could be remove from aqueous solution around 75 % at pH 7-8. Diverse metal ions, i.e. Cr(III), Zn(II) and Cd(II) could significantly reduce the Cu removal at concentration ratio 1:4 for Cu:Cr, 1:6 for Cu:Zn and Cu:Cd. Sorption capacities are 29.7,23.5,27.3 and 24.7 mg/g perlite for Cr(III), Zn(II), Cu(II) and Cd(II), respectively. Desorption of metal ions from adsorbent were in the range of 83-99 % at pH 1. All the metal ions concentration was measured using atomic absorption spectrophotometric detection. Application of the proposed method was successfully demonstrated using the laboratory wastewater.

Keywords: Absorption, Adsorbent, Adsorbent, Adsorption, Aqueous-Solutions, Cadmium, Cd(II), Chromium, Copper, Cr(III), Cu(II), Desorption, Expanded Perlite, Heavy-Metals, Ions, Metal Ions, Metals, Perlite, pH, Removal, Sorbent, Sorption, Toxic Metal, Wastewater, Zinc

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Full Text: 2009\Asi J Che21, 2207.pdf

Abstract: Benzene (Ph) functionalized mesoporous molecular sieve of SBA-15 [Ph-(SBA-15)] was synthesized by post-synthesis method using phenyltriethoxysilane as coupling agent. The products were characterized by means of element analysis, powder X-ray diffraction, infrared spectroscopy, low-temperature nitrogen adsorption-desorption technique, transmission electron microscopy, thermogravimetry-differential thermal analysis. The results showed that phenyl was successfully grafted to the mesoporous molecular sieve SBA-15. The Ph-(SBA-15) mesoporous molecular sieve still retained the ordered mesoporous structure and possesses high thermal stability.

Keywords: Analysis, Benzene, Benzene Functionalization, Characterization, Enzymes, Immobilization, Infrared, Mesoporous, Mesoporous Molecular Sieve Sba-15, Mesoporous Silica Sba-15, Metal Ions, Monolayers, Nitrogen, Phenyltriethoxysilane, Pores, Sba-15, Thermal Stability, X-Ray, X-Ray Diffraction

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Full Text: 2009\Asi J Che21, 2301.pdf

Abstract: This research was performed to choose a suitable activated carbon when a biological activated carbon process was applied and the removal efficiency of organic carbon with biological activated carbon was assessed. Samples of different origin, such as river, lake water and humic acid, using four different types of activated carbon were investigated. The highest removal of dissolved organic carbon was obtained with Cargon and Norit activated carbon for a sample of Han river water and humic acid, respectively. Powder activated carbon appeared to be more efficient at removing dissolved organic carbon than was granular activated carbon for the sample of Han river water. Examination of the apparent molecular weight distribution showed that organic material over 10,000 daltons was removed, while low molecular weight distribution under 1,000 daltons increased after treatment with activated carbon of the sample of Han river water. The breakthrough point for Picabiol and Norit activated carbon was reached faster than was that for Cargon and Samchully activated carbon. An increasing order for biomass formation on activated carbon was shown for Cargon, Picabiol, Samchully and Norit activated carbon, respectively.

Keywords: Activated Carbon, Adsorption, Apparent Molecular Weight Distribution, Biological Activated Carbon, Biomass, Breakthrough, Carbon, Dissolved Organic Carbon, Drinking-Water, Granular Activated Carbon, Performance, Powder Activated Carbon, Removal, Research, Treatment, Water, Water Purification, Weight

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Full Text: 2009\Asi J Che21, 2533.pdf

Abstract: An on-line nickel preconcentration and determination system implemented with inductively coupled plasma optical emission spectrometry associated to flow injection was studied. Trace amounts of nickel were preconcentrated by sorption on a conical mini-column packed with activated carbon modified with a Schiff’s base bis(2-hydroxyphenylamino)glyoxime at pH 5.0. The nickel was removed from the minicolumn with 20 % nitric acid. An enrichment factor of 80-fold for a sample volume of 50 mL was obtained. The detection limit value for the preconcentration method proposed was 70 ng L-1. The precision for 10 replicate determinations at the 0.6 mu g L-1 Ni level was 2.2 % relative standard deviation, calculated from the peak heights obtained. The calibration graph preconcentration method for nickel was linear with a correlation coefficient of 0.9996 at levels near the detection limits up to at least 120 mu g L-1. The method was successfully applied to the determination of nickel in natural water samples.

Keywords: Activated Carbon, Adsorption, Atomic-Absorption-Spectrometry, Bis(2-Hydroxyphenylamino)Glyoxime, Calibration, Carbon, Complex, Copper, Determination, Flow Injection, ICP-AES, ICP-OES, Lead, Nickel, On-Line Preconcentration, Online Preconcentration, pH, Phase Extraction, Preconcentration, Sorption, System, Trace-Metals, Water

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Full Text: 2009\Asi J Che21, 2558.pdf

Abstract: In this Study, removal of some heavy metal ions such as Pb2+, Cd2+ Ni2+ from aqueous solution has been investigated by using malicorium as natural adsorbent. The research is a bench scale experimental type and analyses have performed by using different amounts of adsorbent in solutions with 5 different concentrations of each metal ions. Besides, the effect of various amounts, size of malicorium used and pH in biosorption efficiency experiments has been investigated. Results from this work have indicated that (a) the removal efficiency is highest for lead and is minimum for nickel. About 98 % Pb2+, Were achieved by using 2.5 g absorbent having concentration of 100 mg/L Pb2+. For Cd2+ and Ni2+, the efficiency were 83 and 43 %, respectively in the same condition, (b) optimal efficiency obtained in 30-100 mesh size particles for all three ions, (c) maximum biosorption occurred at pH = 12 for Ni2+ and Cd2+ but for Pb2+ it happens at acidic pH.

Keywords: Adsorption, Aqueous Solution, Biomass, Biosorbent, Biosorption, By-Products, Cobalt, Cu, Heavy Metal, Heavy Metal Ions, Lead, Malicorium, Metal Ions, Ni2+, Nickel, Pb2+, pH, Removal, Research, Sorption, Waste-Water

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Full Text: 2009\Asi J Che21, 2673.pdf

Abstract: A study was conducted to determine the differences in the adsorption behaviour of two non-ionic pesticides, metalaxyl [N-(2,6-dimethyl phenyl)N-(methoxyacetyl)] and glyphosate [N-phosphonomethyl-glycine] on, six agricultural soil samples from Erbil governorate. Data from batch equilibrium method revealed that the adsorption of metalaxyl and glyphosate on the selected soil samples followed the first order rate law. Glyphosate exhibited the faster rate of accumulation with 76.53 % adsorption on the soil solid matrix after 0.5 h as compared to that for metalaxyl 66.06 %. Linear, Freundlich and Langmuir models were used to describe the adsorption of both pesticides. Values of distribution coefficient (K-d) indicated moderate to strong adsorption of metalaxyl (mean calculated K-d: 5.963 mL g(-1)) and very strong adsorption of glyphosate (mean calculated K-d: 703.716 mL g(-1)) and consequently there is no considerable risk of ground water contamination. Wide variation in adsorption affinities of the soils to both pesticides was observed, K-d values for metalaxyl varied between 2.93 and 9.97 mL g(-1) and for glyphosate between 5.16 and 456.34 mL g(-1). A linear correlation was found between the values of adsorption coefficients of both pesticides and soil organic carbon (R-2: 0.61 and 0.69 for metalaxyl and glyphosate, respectively).

Keywords: Adsorption, Adsorption Isotherms, Batch, Carbon, Chromatography, Contamination, Degradation, Distribution Coefficient, Equilibrium, Freundlich, Glyphosate, Glyphosate Adsorption Kinetics, Groundwater, HPLC, Langmuir, Linear, Metalaxyl, Mobility, Models, Organic-Matter, Pesticides, Soil, Soils, Sorption, United-States, Water

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Full Text: 2009\Asi J Che21, 2822.pdf

Abstract: The adsorption behaviour of solute is one of the most important factors to design a batch and a continuous liquid chromatographic separation process. In liquid chromatography, these behaviours are based on the adsorption equilibrium between a liquid mobile-phase and a solid stationary-phase. However, almost of the retention models were developed under linear adsorption isotherm only few researchers have investigated the relationship between the adsorption parameters and the mobile phase composition and some empirical models were introduced. In this work, the adsorption isotherms were obtained by the frontal analysis for 4 low-molecular compounds (benzene, toluene, chlorobenzene and dichlorobenzene) on a commercial C,8 bonded Column The absorption based on the linear and Langmuir models was investigated according to the changes of the composition of methanol high-enriched eluent. The calculations and analysis of the coefficients obtained for both models confirm that the adsorption data for Solutes are best modeled with the linear approach. Langmuir isotherm model couldn’t satisfactorily describe mechanism and provide the objective information on the physical nature of the absorption in spite of the acceptable accuracy.

Keywords: Absorption, Adsorption, Adsorption Isotherm, Adsorption Isotherm Modeling, Adsorption Isotherms, Analysis, Batch, Benzene, Benzene Derivatives, Column, Compounds, Equilibrium, Frontal Analysis, Homologous Series, Isotherm, Isotherms, Langmuir, Langmuir Isotherm, Mobile Phase Composition, Model, Models, Packings, Phase Liquid-Chromatography, Researchers, Retention, Selectivity, Silica, Solid-State Nmr, Solute Retention, Stationary Phases, Toluene

? Mousavi, H.Z. and Asghari, A. (2009), Removal of heavy metal ions in wastewater by semnan natural zeolite. *Asian Journal of Chemistry*, **21** (4), 2881-2886.

Full Text: 2009\Asi J Che21, 2881.pdf

Abstract: Many toxic heavy metals have been discharged into the environment as industrial wastes, causing serious soil and water pollution. Industrial wastewater contain a variety of heavy metals such as Pb, Cd, Hg, Cu, Ni, Zn and Cr and have a high potential of contaminating the receiving water bodies. These metals that tend to accumulate in organisms, causing numerous diseases and disorders. They are also common groundwater contaminants at industrial and military installations. Numerous processes exist for removing dissolved heavy metals, including ion exchange, precipitation, extraction, ultrafiltration, reverse osmosis and solid phase extraction. The use of alternative low-cost materials as potential sorbents for the removal of heavy metals has been emphasized recently. In this study, the potential of Semnan natural zeolites has been investigated for removal of heavy metal cations from industrial waste waters.

Keywords: Adsorption, Adsorption, Environment, Exchange, Extraction, Heavy Metal, Heavy Metals, Industrial Wastewater, Ion Exchange, Natural Zeolites, Pollution, Removal, Reverse Osmosis, Soil, Solid Phase Extraction, Sorption, Ultrafiltration, Wastewater, Water, Water Pollution, Zeolite

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Full Text: [2009\Asi J Che21, 3073.PDF](2009/Asi%20J%20Che21,%203073.PDF)

Abstract: In the present study the biosorption characteristics of Cu(II) ions from aqueous solution using the cone Caucasian fir biomass were investigated. Optimum biosorption conditions were determined as a function of initial metal ion concentrations, biomass dosage, pH and contact time. Caucasian fir cones exhibited the highest copper(II) uptake capacity at the initial pH value of 5.0 in 1 h, 6 g/L biomass dosage and initial copper(II) ion concentration of 50 mg/L. The removal of copper(II) from aqueous solution increased with pH and sharply decreased when pH of the solution was decreased. At the optimal conditions, copper(II) ion biosorption was decreased as the initial metal concentration increased. Freundlich and Langmuir models were applied to describe the biosorption isotherm of the metal ions by Caucasian firbiomass. Both models were found to exhibit good fits to the experimental data.

Keywords: Activated Carbon, Adsorption, Biosorbent, Biosorption, C-Vulgaris, Caucasian Fir Cones, Chromium(VI), Copper, Equilibrium, Heavy-Metals, Isotherm, Removal, Waste-Water, Z-Ramigera

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Full Text: 2009\Asi J Che21, 3161.pdf

Abstract: The adsorption of 5-o-tolyl-2-pentene in liquid phase on 5A, NaY and NaX zeolites has been studied by IR spectroscopy. The slightly higher preference of Na cation-exchanged zeolites for an alkene can be clarified in term of stronger interaction of unsaturated hydrocarbons with ionic nature of the zeolite surface. The IR results show that methyl and methylene groups are the sources of adsorption on cationic site of the zeolites.

Keywords: 5-O-Tolyl-2-Pentene, 5A, Adsorption, FTIR, Zeolite, Zeolites

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Full Text: [2009\Asi J Che21, 3334.PDF](2009/Asi%20J%20Che21,%203334.PDF)

Abstract: This study was performed to determine divalent metal ion [Cu(II), Zn(II), Mn(II) and Ni(II)] adsorption characteristics of the herbaceous peat of the Gavur Lake, Turkey. The adsorption data of the metal ions were fitted to both the Langmuir and the Freundlich isotherms. The adsorption capacity of the peat was much higher for Cu (38.5 mg g-1) compared with Zn (28.0 mg g-1), Mn (26.4 mg g-1) and Ni (24.1 mg g-1) steady increase in equilibrium Ca and Mg ion concentrations were measured as initial metal ion concentrations increased from 1🞨10-3 M to 5🞨10-3 M in Cu and Zn adsorption experiments indicating that ion exchange was an important mechanism in the adsorption. The kinetic study revealed that the adsorption followed the pseudo-second-order model and the interaction between the metal ions and the peat was very fast, especially for Cu. The pH study revealed that Cu adsorption was not affected in the pH range between 3 and 5, but the adsorption of Zn, Mn and Ni was lower at pH 3 compared with pH 4 and 5.

Keywords: Adsorption, Aqueous-Solution, Cadmium, Copper, Copper, Cu2+, Kinetics, Kinetics, Manganese, Nickel, Pb2+, Peat, Removal, Sorbents, Sorption, Sphagnum, Zinc

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Full Text: 2009\Asi J Che21, 3347.pdf

Abstract: The effect of cationic template on the adsorption of dichromate ion and furfural in MCM-41 was investigated in this work. Cetyltrimethylammonium bromide (CTAB) was used as the cationic template for synthesis of MCM-41 (mobil composition of matter 41, a mesoporous material with a hexagonal array of uniform pores). The properties of synthesized sample were characterized with X-ray diffraction (XRD), FTIR and thermogravimetric analysis. The as-synthesized-MCM-41 samples were used for the separation of dichromate anion and furfural from aqueous solution and showed high adsorption capacity for both of them. The parameters investigated in this study include agitation speed, contact time, composition of adsorbent (in the presence and absence of surfactants) and initial dichromate and furfural concentrations. Adsorption uptakes were rapid on the adsorbent reaching equilibrium in less than I h. As-prepared material showed excellent adsorption capacity toward Cr (VI)and furfural (i.e. 2.43 mmol/g and 1.87 mmol/g, respectively). The materials without surfactant does not show affinity for ionic and organic analyte. Dominant sorption mechanisms were predicted to be electrostatic, hydrophobicity, hydrogen bonding and pi-pi interactions.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Analysis, Anion-Exchange Resins, Capacity, Carbon, Cationic Template, Cetyltrimethylammonium Bromide, Chitosan, Chromate, Chromium, Chromium, Contact Time, Ctab, Equilibrium, Ftir, Furfural, Heavy-Metal, Industrial-Waste, MCM-41, Mesoporous, Mesoporous Material, Oxidation, Phase, Removal, Sorption, Synthesis, X-Ray, X-Ray Diffraction, XRD

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Full Text: 2009\Asi J Che21, 3381.pdf

Abstract: This work assesses the potentialities of natural zeolites as useful adsorptive material for separation and preconcentration of trace amounts of metal ions. Natural analcime and natrolite zeolites were modified by benzyldimethyltetradecylamonium chloride solution at 110 degrees C for 12 h and then was saturated with 2-(5-bromo-2-pyridylazo)-5-diethylaminophenol (5-Br-PADAP) as useful reagent for preconcentration of trace metal ions. A column contains modified zeolite as useful adsorbent was used for solid-phase extraction of trace lead and cadmium ions. Different parameters that necessary for solid-phase extraction were examined in this work and zeolites were known useful adsorbents for solid-phase extraction and preconcentration of traces metal ions.

Keywords: Aas, Adsorbents, Analcime, Cadmium, Complexation, Exchange, Extraction, Lead, Membrane, Metal Ions, Natrolite, Performance Liquid-Chromatography, Preconcentration, Separation, Solid Phase Extraction, Solid-Phase Extraction, Solid-Phase Extraction, Sorbents, Sorption, Trace Metal, Water Samples, Zeolite, Zeolites

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Full Text: [2009\Asi J Che21, 3622.PDF](2009/Asi%20J%20Che21,%203622.PDF)

Abstract: Sawdust an inexpensive material is currently being investigated as an adsorbent for removing undesired material from water. In this study, natural sawdust and modified ethylenediamine sawdust were used for sorption of methyl violet dye. The sorption characteristics of methyl violet by sorbent were studied under various experimental conditions. The effect of different parameters such as contact time, varying dye concentration, agitation time, pH of the medium and temperature was investigated. Simultaneous removal of methyl violet occurred at pH 10, contact time 1 h, 0.1 g of sorbent and room temperature (25°C). Decreasing particle size increased the uptake of dyes. The kinetics of methyl violet dye sorption fitted a pseudo-second order rate expression. The equilibrium adsorption capacity of sawdust for methyl violet was obtained by using linear Freundlich and Langmuir isotherms.

Keywords: Acid Dye, Adsorbents, Adsorption, Adsorption, Color Removal, Dye Removal, Effluent, Equilibrium, Fly-Ash, Methyl Violet, Modified Sawdust, Residues, Sawdust, Sorption, Waste, Wastewater

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Full Text: 2009\Asi J Che21, 3799.pdf

Abstract: This work is related to algae biomass immobilization with sol gel technique using TEOS precursor as silica matrix to adsorb Cu(II) in aqueous solution. The data obtained showed that adsorption processes of Cu(II) are optimum at pH of 5-6, with an interaction time of 1 h. Adsorption capacity of adsorbent from Nannochloropsis sp biomass immobilized on silica through sol gel technique is 6-7 times higher than on silica gel. Adsorption capacities of Cu(II) are found to be in the range of 11.38-14.48 kJ/mol contributing as physical interaction.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Biomass, Biosorption, Capacity, Cells, Cu(II), Immobilization, Kinetics, Lead, Marine-Algae, Nannochloropsis Sp Biomass, pH, Silica, Sol Gel, Sol-Gel, Sorption, Water

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Full Text: 2009\Asi J Che21, 4039.pdf

Abstract: Decolourization of reactive orange by Gracilaria verrucosa was evaluated under several parameter conditions. The decolourization method consisted of adding 0.2 g marine alga biomass in 50 mL of solution containing dye of different concentrations together in a rotary shaker. The decolourization profile was highly dependent upon the initial pH concentration, the adsorbent dosage and the temperature of the dye solution. Marine alga biomass exhibited higher uptakes at pH 4 of all concentrations examined. The high uptakes values at 0.2 g/50 mL was observed and then decreased for the further increase in dosage. As the temperature increased the uptake of dye increases up to room temperature and the uptake decreases with further increase in temperature. Adsorption isotherms have been correctly represented by Langmuir, Freundlich isotherm model.

Keywords: Adsorption, Adsorption Isotherms, Batch, Biomass, Biosorption, Decolourization, Dye, Freundlich, Freundlich Isotherm, Isotherm, Isotherms, Langmuir, Macroalgae, Marine Alga, Model, pH, Reactive Dye, Reactive Orange 16, Red Seaweed, Rhizopus-Arrhizus, Temperature

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Full Text: 2009\Asi J Che21, 4515.pdf

Abstract: Activated carbon prepared from phosphorylated tamarind nut (PTNC) has been used for the removal of Ni(II) from aqueous system by batch and column experiments. The efficiency of PTNC was compared with commercial granular activated carbon (CAC). The equilibrium adsorption capacity was determined as a function of the solution pH, adsorbent dosage and contact time for both carbons ana found to follow Freundlich and Langmuir isotherms. Kinetic studies indicated that the removal process followed reversible first order equation and adsorption of Ni(II) governed by film diffusion process. Desorption of Ni(II) from carbons were also done by 0.3 N HCl. Column studies were conducted in 2.5 cm diameter columns. Under optimum conditions of flow rate and bed height, breakthrough capacities were found out. PTNC was found to be 6 times superior to CAC in the removal of Ni(II). The mechanism of adsorption for Ni(II) on to PTNC was found to follow ion exchange process predominantly and supported by FT-IR. Nickel(II) removal was also confirmed by XRD and SEM studies.

Keywords: Acid, Activated Carbon, Adsorption, Adsorption Capacity, Batch, Breakthrough, Capacity, Carbon, Column, Contact Time, Desorption, Diffusion, Equilibrium, Exchange, Freundlich, Freundlich Isotherm, Ft-Ir, Ftir, Ion Exchange, Isotherms, Kinetic, Kinetic Studies, Langmuir, Langmuir Isotherms, Nickel(II) Removal, pH, Phosphorylated Tamarind Nut Carbon, Porosity, Removal, Sem, System, Water, XRD

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Full Text: 2009\Asi J Che21, 4763.pdf

Abstract: Chromium is present in different types of industrial effluents, being responsible for environmental pollution. Traditionally, the chromium removal is made by chemical precipitation. However, this method is not completely feasible to reduce the chromium concentration to levels as low as required by environmental legislation. Biosorption is a process in which solids of natural origin are employed for binding heavy metals. It is a promising alternative method to treat industrial effluents, mainly because of its low cost and high metal binding capacity. The aim of the present study. is to utilize the locally available wild plant material for heavy metal removal from industrial wastewater. The wastewater containing trivalent chromium was treated with biomass prepared from roots of Calotropis procera. These studies were carried out in order to determine some operational parameters of chromium sorption such as the time required for the metal-biosorbent equilibrium, the effects of change in biomass quantity and pH. It was found that a time of 50 min is sufficient enough to attain equilibrium. The optimum pH was found to be 4 for chromium. The biosorption data was well fitted to Langmuir and freundlich adsorption model. It is concluded that adsorbent prepared from Calotropis procera roots can be used for treatment of heavy metals in waste waters.

Keywords: Adsorbents, Adsorption, Aqueous-Solutions, Biomass, Biosorption, Calotropis Procera, Capacity, Chromium, Cost, Cr(III), Equilibrium, Heavy Metal, Heavy Metals, Heavy-Metals, Industrial Effluents, Industrial Wastewater, Kinetics, Langmuir, Metal Removal, Model, Peanut Hull Pellets, pH, Pollution, Removal, Seaweed Biosorbent, Sorption, Treatment, Waste-Water, Wastewater

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Full Text: 2009\Asi J Che21, 4914.pdf

Abstract: The adsorption of triethyl phosphate on FAU type zeolite has been investigated by using FT-IR spectroscopy. Zeolites are a large and diverse class of volcanic aluminosilicate crystalline materials which have many useful applications. They are used in oil cracking, adsorption of nuclear waste as well as production of control led-release fertilizers for agriculture, adsorption of ammonia and other odour-volatiles, as cation absorbers in household detergents, as molecular sieves and for many other uses. Zeolites, which are known by their porous structure, are used widely to remove pollutants from nature. In this point of view, zeolites are special type of mineral which is playing an increasing role to solve environmental problems. In this study, we used NaY and NaX zeolites as adsorbents. After adsorption process, characteristic wavenumbers of triethyl phosphate had been observed by FT-IR spectroscopy. Addition to that, elemental analysis results had been supported that adsorption occurred on zeolite surface.

Keywords: Adsorbents, Adsorption, Aluminosilicate, Ammonia, Analysis, Control, Fau Type, Ft-Ir, Ft-Ir Spectroscopy, Ftir, Ftir Spectroscopy, Molecular Sieves, Phosphate, Production, Zeolite, Zeolites

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Full Text: 2009\Asi J Che21, 5273.pdf

Abstract: In this paper, the activated carbon obtained by pyrolysis of butter oil cake (Bassia latifolia) is used to remove hexavalent chromium ions effectively. Experimental analysis for optimizing carbon dosage, pH and contact time was performed and the results are validated by Freundich adsorption isotherm.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherm, Analysis, Butter Oil Cake, Carbon, Chromium, Chromium(VI), Contact Time, Hexavalent Chromium, Isotherm, Oil, pH, Removal, Vi, Waste, Water

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Full Text: 2009\Asi J Che21, 5458.pdf

Abstract: In this study, adsorption kinetics, thermodynamics and adsorption stability parameters of maxilon red GRL and maxilon yelow GRL which are used in textile industry especially in dyeing of acrylic fibers on to bentonite were studied. The adsorption of the dyes onto bentonite was investigated during a series of batch adsorption experiments to determine the effect of initial dye concentration and contact time. The Langmuir and Freundlich isotherm models were tested for their applicability. Adsorption capacities, adsorption stability constants and Langmuir and Freundlich constants were calculated. Kinetic studies have been made at two different temperatures Adsorption equilibrium studies have been studied using 5 different dye solutions at 37 degrees C, pH 4.5-5.0 and in 10 h. The experimental data were analyzed using the pseudo first-order adsorption kinetic model. According to this model, the rate constants were evaluated at two different temperatures.

Keywords: Adsorption, Adsorption Equilibrium, Adsorption Kinetics, Aqueous-Solution, Basic Dyes, Batch, Bentonite, Blue, Carbons, Chitosan, Contact Time, Dye, Dyes, Dyestuffs, Equilibrium, Fibers, Freundlich, Freundlich Isotherm, Isotherm, Isotherm Models, Kinetic, Kinetic Model, Kinetic Studies, Kinetics, Kinetics of Adsorption, Langmuir, Langmuir And Freundlich Isotherm, Langmuir Model, Model, Models, pH, Reactive Dyes, Removal, Thermodynamics

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Full Text: 2009\Asi J Che21, 5727.pdf

Abstract: The adsorption of cobalt ions from aqueous solutions onto Nevsehir and Kayseri pumice was investigated in this study. Pumice samples were activated at 873 K for 2 h before contact with cobalt ions. In order to develop the predictive regression models all experiments were performed according to statistical designs. The concentrations of cobalt ions were measured by UV-Vis spectrophotometer. The maximum removal efficiencies of 60 and 80% have been obtained experimentally using Nevsehir pumice and Kayseri put-nice, respectively. The goal of modeling was analyze the influence of sorbent dosage and initial cobalt concentration on sorption efficiency in case of Nevsehir and Kayseri pumice sorbent. The contour response surface plot was drawn for spatial presentation of regression equation. The experiments with radioactive Co-60 were performed to test Kayseri pumice ability to remove radioactive compounds. The results showed that Nevsehir and Kayseri pumice can be used as efficient sorption materials for cobalt ions.

Keywords: Adsorbents, Adsorption, Adsorption, Aqueous Solutions, Cobalt, Cobalt Ions, Compounds, Dye, Heavy-Metals, Kayseri Pumice, Modeling, Models, Nevsehir Pumice, Optimization, Pumice, Removal, Response Surface Methodology, Sorbent, Sorption, Waste, Water

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Full Text: 2009\Asi J Che21, 5941.pdf

Abstract: The paper concerns with the adsorptive treatment of dye I-brilliant yellow and dye 2-benzoazurin G in aqueous solution on polyvinyl alcohol (PVA) coated carbon black as an adsorbent. The effect of pH, concentration and time on adsorption process was investigated and adsorption equilibrium isotherms reported. The adsorption equilibrium data fitted to both Freundlich and Langmuir isotherms equally well. Batch adsorption studies were conducted at room temperature (30 degrees C). The per cent removal of benzoazurin G was 80% and brilliant yellow was 84%.

Keywords: Adsorbent, Adsorption, Carbon, Concerns, Dye, Dyes, Equilibrium, Freundlich, Isotherms, Langmuir, Langmuir Isotherms, pH, Removal, Temperature, Treatment, Waste Waters

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Full Text: 2009\Asi J Che21, 6005.pdf

Abstract: The present research was aimed at the development of chitin as an adsorbent that it can be used in the removal of lead(II) ions to obtain equilibrium, kinetics and thermodynamic parameters. The experimental results show that the optimal pH for the sorption of lead(II) ions was 6.72 in the CH3COOH-CH3COONa system and the maximum adsorption capacity was estimated to 44.0 mg g(-1) chitin by saturated capacity method. The apparent sorption rate constant was k(298K) = 2.70 x 10(-5) s(-1). Experimental results were found to fit to Freundlich isotherm model over the entire studied concentration range. Effect of temperature on the equilibrium distribution values has been studied to evaluate the changes. The thermodynamic parameters, Delta G(298K) was calculated to be -16.1 kJ mol(-1), Delta H and Delta S were found to be 13.1 kJ mol(-1) and 97.8J mol(-1) K-1 and the results show that the adsorption was feasible, spontaneous and endothermic under examined conditions. Adsorption mechanism was also proposed for the adsorption of lead(II) ions onto chitin using infrared spectroscopy technique.

Keywords: Adsorption, Adsorption Capacity, Adsorption Mechanism, Biomass, Biosorption, Cadmium, Capacity, Chitin, Development, Effect of Temperature, Equilibrium, Freundlich, Freundlich Isotherm, Heavy-Metal Ions, Infrared, Isotherm, Kinetics, Kinetics, Lead(II), Model, pH, Removal, Research, Resin, Sorption, System, Temperature, Thermodynamic, Thermodynamic Parameters

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Full Text: [2009\Asi J Che21, 6015.PDF](2009/Asi%20J%20Che21,%206015.PDF)

Abstract: In this study, the biosorption capacity of the fungus *Sporotricum* sp. biomass in removing of Pb(II) ions from aqueous solution were investigated with different parameters, such as pH, temperature and initial metal ion concentrations in a batch adsorption system. The maximum biosorption of Pb(II) ions onto the *Sporotricum* sp. biomass was 15.48 mg per g of the biomass. The biosorption of Pb(II) ions increased with increased pH up to 6.0 at which the maximum biosorption was obtained. Temperature change between 15 and 40°C did not affect the biosorption capacity of the fungal biomass. Desorption of the Pb(II) ions was achieved using 0.1 M HCl solution. Biosorption equilibria were established in about 24 h. Biosorption experimental data could be well interpreted by the Langmuir model with maximum adsorption capacity of 16.42 mg g-1 of Pb(II) ion on to the *Sporotricum* sp. biomass. Also the correlation regression coefficients show that the biosorption process can be well-defined by Freundlich model. The change in biosorption capacity with time was found to fit the pseudo-second-order kinetic model.

Keywords: Adsorption, Adsorption Capacity, Aqueous Solution, *Aspergillus-niger*, Batch, Batch Adsorption, Biomass, Biosorption, Cadmium Ions, Calcium Alginate, Capacity, Correlation, Data, Desorption, Equilibria, Equilibrium, Experimental, Freundlich, Freundlich Model, Fungal Biomass, Fungus, Heavy Metals, Heavy-Metal Biosorption, Immobilized Biomass, Ions, Kinetic, Kinetic Model, Langmuir, Langmuir Model, Lead, Lentinus-Sajor-Caju, Metal, Metal Ion, Model, Optimization, Pb(II), Pb(II) Ions, pH, *Phanerochaete-chrysosporium*, Pretreated Biomass, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Regression, *Rhizopus-arrhizus*, *Saccharomyces-cerevisiae*, Solution, *Sporotricum* sp., Temperature

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Full Text: 2009\Asi J Che21, 6877.pdf

Abstract: A new low cost activated carbon prepared from flame tree seed coat (FTSC) by acid process followed by thermal activation was used as an adsorbent in the present investigation for the removal of chromium(VI) from its aqueous solution. The efficiency of the activated carbon in the removal of chromium(VI) was studied under various experimental conditions such as dosage of adsorbent, pH and contact time. More than 85 % removal was achieved under optimal conditions. The adsorption obeys Freundlich adsorption isotherm.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherm, Carbon, Chromium(VI), Contact Time, Cost, Flame Tree Seed Coat, Freundlich, Isotherm, pH, Removal, Thermal Activation

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Full Text: 2009\Asi J Che21, 7101.pdf

Abstract: Laboratory investigations of the potential use of powder W pummelo peel as a sorbent for removal of the methylene blue, neutral red and congo red from aqueous solutions were conducted. The effects of various experimental parameters (e.g., initial pH, sorbent dose, initial dye concentration and contact time) were tested and optimal experimental conditions were ascertained. The isothermal data of methylene blue and neutral red fit the Langmuir model well and the processes of adsorption follow first order rate kinetics. As to the anionic dye congo red, the adsorption basically obeys Langmuir isotherm, but the uptake rate is rather lower than those of methylene blue and neutral red. The results in this study indicate that pummelo peel is a promising candidate for removing cationic dyes methylene blue and neutral red from the dye wastewater.

Keywords: Adsorption, Aqueous Solutions, Azo-Dyes, Biosorption, Congo Red, Contact Time, Decolorization, Dye, Dyes, Isotherm, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Model, Methylene Blue, Methylene-Blue, Model, pH, Pummelo Peel, Removal, Sorbent, Sorption, Waste Materials, Waste-Water, Wastewater

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Full Text: 2009\Asi J Che21, 7149.pdf

Abstract: The continuous adsorption of lead ions from aqueous solutions on phosphorylated tamarindnut carbon and commercial activated carbon was studied. The aim of carrying the continuous flow studies is to assess the effect of pH. flow rate and bed height on the adsorption of lead ion. This has helped in ascertaining the practical applicability of the adsorbent in large scale. The effect of common anions and cations on adsorption of lead ions was examined. The regeneration capacity of carbons was analyzed by repeated adsorption and desorption processes. Breakthrough capacities were found out using wastewater containing lead ions and phosphorylated tamarindnut carbon was found to be superior to commercial activated carbon in the removal of lead ions.

Keywords: Activated Carbon, Adsorption, Aqueous Solutions, Aqueous-Solutions, Bran, Breakthrough, Capacity, Carbon, Column, Desorption, Equilibrium, Ions, Lead, Lead(II), Lead(II) Removal, pH, Phosphorylated Tamarind Nut Carbon, Regeneration, Removal, Removal of Lead Ions, Wastewater

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Full Text: [2009\Asi J Che21, 7163.pdf](2009/Asi%20J%20Che21,%207163.pdf)

Abstract: The aim of this work is to evaluate the removal of Ni(II) from aqueous solutions by modified Amberlite XAD-7HP and Duolite XAD-761 resins. These modified resins have been individually prepared by complete mixing of parent resins with anionic surfactant-sodium dioctyl sulphosuccinate (SDOSS) and EDTA-disodium salt (chelating agent) in an aqueous solutions. The equilibrium adsorption level was determined as a function of contact time, pH and adsorbent doses. Adsorption isotherms of Ni(II) on adsorbents were determined and correlated with common isotherm equations such Langmuir and Freundlich models. The results showed that the adsorption kinetics of Ni(II) on modified XAD-7HP and XAD-761 resins could be best described by the pseudo-second-order model. The nickel(II) ions could be successfully recovered from the modified resin by treatment with 3-5 % NaCl. The modified resins thus regenerated could be used again to remove the heavy metal ions.

Keywords: Acid, Activated Carbon, Adsorbent, Adsorbents, Adsorption, Adsorption Isotherms, Adsorption Kinetics, Aqueous Solutions, Atomic-Absorption Spectrometry, Biosorption, Chromium(VI), Desorption, Equilibrium, Freundlich, Function, Heavy Metal, Heavy Metal Ions, Ions, Isotherm, Isotherm Equations, Isotherms, Kinetics, Langmuir, Metal, Metal Ions, Mixing, Model, Models, Modified, Modified XAD, NaCl, Ni(II), Nickel(II), Nickel(II) Removal, pH, Precious Metals, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Removal, Resin, Resins, Salt, Solid-Phase Extraction, Solutions, Sorption, Surfactant-EDTA, Treatment, Work

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Full Text: 2009\Asi J Che21, 7271.pdf

Abstract: Cadmium adsorption capacity by Eucheuma cottonii and carrageenan was investigated. 64.3 % carrageenan was successfully extracted from E. cottonii by weakly alkaline solution (pH 8.5) at 95 degrees C for 18 h. FTIR spectra of the extracted carrageenan showed the same spectra as the pure carrageenan. Batch experiment was conducted to determine the cadmium biosorption capacities-of E. cottonii and carrageenan. Cadmium concentration was measured by atomic absorption spectrophotometry. Biosorption capacity of cadmium was 0.95, 3.85 and 3.87 mg/g for E. cottonii, extracted carrageenan and pure carrageenan, respectively.

Keywords: Absorption, Adsorption, Adsorption Capacity, Algae, Atomic Absorption Spectroscopy, Biomass, Biosorption, Brown, Cadmium, Capacity, Carrageenan, E. Cottonii, FT-IR, FTIR, Galactans, Green, Heavy-Metal Biosorption, pH, Seaweed

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Full Text: [2010\Asi J Che22, 271.PDF](2010/Asi%20J%20Che22,%20271.PDF)

Abstract: Adsorption kinetics of cyanide on coconut shell activated carbon were determined from batch tests. The kinetic data were fitted to pseudo-first-order and pseudo-second-order kinetic models and was found to follow closely the pseudo-second-order kinetic model. Remaining cyanide concentration in wastewater at several time after addition coconut shell activated carbon are modeled by adaptive neuro-fuzzy inference system (ANFIS) at different initial cyanide concentration. The results obtained in this work indicate that ANFIS is an effective method for prediction of remaining cyanide concentration in solution and have better accuracy and simplicity compared with results obtained from the applicable kinetic model.

Keywords: Accuracy, Activated Carbon, Adaptive Neuro-Fuzzy Inference System, Adsorption, Adsorption Kinetics, Aqueous-Solution, Batch, Batch Tests, Carbon, Coconut Shell, Coconut Shell Activated Carbon, Concentration, Controller, Cyanide, Data, Dioxide, Dye, Inference, Kinetic, Kinetic Model, Kinetic Models, Kinetics, Model, Modeling, Models, Prediction, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Recovery, Removal, Solution, Time, Waste, Wastewater, Work

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Full Text: 2010\Asi J Che22, 335.pdf

Abstract: Potentiometeric sorption experiments were conducted for screening of cost-effective 11 strains of white rot fungi isolated from metal contaminated soils of Pakistan. In potentiometeric experiments, it was found that the uptake of the metal ions by the different strains was accompanied with proton release, indicating that the metal binding occurs via an ion exchange as well as by electrostatic interaction between functional groups and heavy metal ions. The minimum inhibitory concentrations (MIC) suggested. that the metal toxicity was dependent on fungal isolates. All white rot fungi showed highest toxicity to Pb(II), Cr(III) and Cr(VI), whereas, Cu(II) and Zn(II) were found to be least toxic heavy metals. Ganoderma lucidum, Agaricus bitorquis (J(77)) and Pleutrotus sajor-caju were more resistant to all heavy metals in comparison to other fugal isolates. The heavy metal sequestration ability of white rot fungi was also studied. Furthermore, conductometeric titrations were carried out for evaluation of ionizable functional groups. The results of the present study clearly demonstrates that different strains of white rot fungi may have a potential for use as high-value biosorbent of heavy metals and it deserves further investigations for practical applications.

Keywords: Adsorption, Aqueous-Solutions, Arthrobacter-Sp, Biosorbent, Biosorption, Comparison, Conductometery, Cr(III), Cr(VI), Cu(II), Degradation, Equilibrium, Evaluation, Exchange, Fusarium-Solani, Heavy Metal, Heavy Metal Ions, Heavy Metals, Ion Exchange, Metal Ions, Metals, Pb(II), Potentionmetery, Shewanella-Putrefaciens, Soils, Sorption, Toxic Metals, Toxicity, Waste Biomass, White Rot Fungi

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Full Text: [2010\Asi J Che22, 439.PDF](2010/Asi%20J%20Che22,%20439.PDF)

Abstract: Removal of acid orange 3 from aqueous solution by activated carbon adsorption was studied. The optimal adsorption conditions for the removal of acid orange 3 aqueous solution were pH = 0.5, activated carbon 500 mg L-1, initial concentrations of the dye 100 mg L-1 and T = 35ºC a removal efficiency of 98% was achieved within 1h. Kinetic data of adsorption were well fitted the pseudo-second-order kinetic model and the Langmuir isotherm. The approach may be applied to treat the industrial wastewater containing acid orange 3 if appropriate conditions are selected.

Keywords: Acid Orange 3, Activated Carbon, Activated Carbon Adsorption, Adsorption, Approach, Aqueous Solution, Carbon, Data, Dye, Dye Removal, Efficiency, Equilibrium, Industrial Wastewater, Isotherm, Kinetic, Kinetic Model, L1, Langmuir, Langmuir Isotherm, Langmuir Model, Model, Pb(II), pH, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Model, Removal, Removal Efficiency, Sawdust, Solution, Wastewater

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Full Text: 2010\Asi J Che22, 455.pdf

Abstract: In the present investigation an aquatic plant, Nasturtium officinale was examined for its biosorption ability of heavy metal ions. The results obtained from biosorption experiments were used to understand the driving forces that govern the interaction between metal ions and biosorbent. The experimental biosorption data were fitted to the Scatchard plot, Langmiur and Freundlich isotherms. According to the parameters of the Langmiur isotherm, the maximum biosorption capacities of Cd2+ and Co2+ were 0.56 and 0.49 mg/g, respectively. In view of Freundlich isotherms. the maximum biosorption capacities of Cd2+ and Co2+ were 2.23 mg/g for both of metal ions.

Keywords: Adsorption, Aquatic Plant, Aqueous-Solution, Biosorbent, Biosorption, Cu, Freundlich, Freundlich Isotherm, Heavy Metal, Heavy Metal Ions, Isotherm, Isotherms, Macrophytes, Metal Ions, Myriophyllum-Spicatum, Nasturtium Officinale, Phytoaccumulation, Scatchard, Trace-Elements, Water, Wetland Plants, Zn

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Full Text: 2010\Asi J Che22, 546.pdf

Abstract: The adsorption of 2,2’-bipyridine onto loughlinite (Na-sepiolite) has been investigated by FT-IR and micro-Raman spectroscopy. Spectroscopic results indicate the formation of monoanionic surface species. Most of the adsorbed molecules are incorporated in the channels of the clay structure and coordinated to Lewis acidic centers directly or indirectly through water molecules.

Keywords: 2,2’-Bipyridine, Adsorption, Anatolia, Clay, Clays, Cyclohexylamine, Desorption, FT-IR, FTIR, Infrared And Raman Spectra, Loughlinite, Luminescent, Molecules, Na-Sepiolite, Pyridine, Raman-Spectra, Sepiolite, Transition-Metal-Complexes, Vibrational Frequencies, Water

? Tomul, F. and Basoglu, F.T. (2010), Adsorption of copper and zinc from aqueous solutions by bentonite. *Asian Journal of Chemistry*, **22** (1), 615-628.

Full Text: [2010\Asi J Che22, 615.PDF](2010/Asi%20J%20Che22,%20615.PDF)

Abstract: Bentonite has been used as an adsorbent for the removal of Cu2+, and Zn2+ ions from aqueous solutions via adsorption. The effect of the adsorbent amount, pH of suspension, solution concentration and temperature and the contact time on adsorption was investigated. The amount of Cu2+ and Zn2+ ions adsorbed increased with increasing adsorbent amount, pH and temperature and with decreasing concentration. The adsorption parameters were obtained using Reciprocal Langmuir, Langmuir, Linear Freundlich, Freundlich and Langmuir-Freundlich isotherm models by use of non linear regression analysis. The adsorption isotherm studies indicated that adsorption was consistent with the Reciprocal Langmuir isotherm model. Results of the thermodynamic studies indicated that the adsorption of both ions on bentonite was spontaneous and favourable and an endothermic nature of adsorption. A pseudo-second order equation described the adsorption process for either Cu2+ or Zn2+. The results of this study demonstrated that the bentonite is a potential adsorbent for the removal of Cu2+ and Zn2+ ions from aqueous solutions.

Keywords: Acid Activation, Adsorbent, Adsorption, Adsorption Isotherm, Analysis, Aqueous Solutions, Bentonite, Clay, Concentration, Copper, Cu(II), Cu2+, Endothermic, Freundlich, Heavy-Metals, Ions, Isotherm, Isotherm Model, Kaolinite, Kinetic, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Langmuir-Freundlich, Langmuir-Freundlich Isotherm, Linear Regression, Model, Models, Montmorillonite, Natural Bentonite, pH, Potential, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Regression, Regression Analysis, Removal, Solution, Solutions, Suspension, Temperature, Thermodynamic, Thermodynamic Studies, Time, Waste-Water, Zinc, Zn2+

? Tham, Y.J., Latif, P.A., Abdullah, A.M. and Taufiq-Yap, Y.H. (2010), Physical characteristics of activated carbon derived from durian shell. *Asian Journal of Chemistry*, **22** (1), 772-780.

Full Text: 2010\Asi J Che22, 772.pdf

Abstract: Durian shells are easily available agricultural by-products and its large quantities of generation make it a potential source for production of low cost activated carbon. This study was performed to determine the characteristics of activated carbon prepared from durian shell. Ultimate and proximate analysis for raw material was determined. The durian shell activated carbon was prepared from impregnating the sample in 5, 10, 20 and 30% (v/v) concentration of phosphoric acid for 24 h, followed by carbonization at different temperatures in nitrogen atmosphere. The results showed that various treatment conditions affect the percentage of yield, surface area and pore structure. The highest BET surface area 1404 m(2)/g was obtained at 30% of acid concentration, 500 degrees C and 20 min of heating.

Keywords: Activated Carbon, Adsorption, Analysis, Bagasse, Bet Surface Area, Carbon, Chemical Activation, Cost, Durian Shell, Dye, Husk, Nitrogen, Phosphoric Acid, Phosphoric-Acid Activation, Pore, Pore Structure, Production, Removal, Surface-Area, Treatment, Wood

? Acemioglu, B., Kertmen, M., Digrak, M., Alma, M.H. and Temiz, F. (2010), Biosorption of crystal violet onto *Aspergillus wentii* from aqueous solution. *Asian Journal of Chemistry*, **22** (2), 1394-1402.

Full Text: [2010\Asi J Che22, 1394.PDF](2010/Asi%20J%20Che22,%201394.PDF)

Abstract: In this study Aspergillus wentii, a fungal biomass was utilized as a biosorbent for adsorption of crystal violet (a cationic dye) from aqueous solution. Biosorption experiments were performed as a function of various parameters, such as contact time, initial dye concentration. temperature, biosorbent dose and solution pH. Required time for maximum dye biosorption was 45 min. Biosorption was in consistent with Freundlich isotherm. It was seen that the amounts of the dye biosorbed onto Aspergillus wentii increased with increasing contact time, initial dye concentration, temperature, biosorbent dose and solution pH. Kinetic studies also showed that the bisorption process obeyed well the pseudo-second order kinetic model.

Keywords: Adsorption, Aqueous Solution, *Aspergillus Wentii*, Biomass, Biosorbent, Biosorption, Cationic Dye, Concentration, Congo Red, Crystal Violet, Dye, Dye Biosorption, Equilibrium, Experiments, Freundlich, Freundlich Isotherm, Function, Fungal Biomass, Isotherm, Kinetic, Kinetic Model, Kinetic Studies, Kinetics, Kinetics, Methylene-Blue, Model, Perlite, pH, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second-Order, Removal, Solution, Sorption, Temperature, Textile Dyes, Time, Waste

? Mahramanlioglu, M., Ozgen, O., Cinarli, A. and Kizilcikli, I. (2010), Adsorption of pyridine by acid treated spent bleaching earth. *Asian Journal of Chemistry*, **22** (2), 1428-1434.

Full Text: 2010\Asi J Che22, 1428.pdf

Abstract: The adsorption of pyridine on acid treated spent bleaching earth was studied as a function of time. pH and initial concentration. Lagergren first order rate equation was used to describe the adsorption rate of pyridine and adsorption rate constants were calculated. Rate constants of intraparticle diffusion were also calculated. Adsorption isotherms were modelled by the Langmuir equation and the constants of this isotherm were calculated. The dependence of the adsorption of pyridine on the pH of the solution was studied to find the optimum pH value. In order to study the effect of pH on the adsorption of pyridine, experiments were carried out at different pHs. The maximum adsorption was found to occur at pH 6.5. Giles isotherm was used and adsorption type was determined.

Keywords: Adsorbents, Adsorption, Adsorption Isotherms, Agricultural Waste Materials, Alpha-Picoline, Aqueous-Solution, Diffusion, Equilibrium, Granular Activated Carbon, Isotherm, Isotherms, Langmuir, Langmuir Equation, Mining Waste, pH, Picolines, Pyridine, Removal, Rice Husk Ash, Sorption, Spent Bleaching Earth

? Yilmaz, K., Saltali, K., Guzel, E.U. and Dikici, H. (2010), Zinc(II) Sorption characteristics of soils in predominant smectite, illite and kaolinite clay minerals. *Asian Journal of Chemistry*, **22** (2), 1487-1494.

Full Text: [2010\Asi J Che22, 271.PDF](2010/Asi%20J%20Che22,%20271.PDF)

Abstract: The purpose of the present study was to evaluate the adsorption behaviour of zinc in soils dominated with smectite, illite and kaolinite. The linear Langmuir model is more suitable for the adsorption of Zn ions onto the soils since it had higher coefficient of determination value compared with that of the linear Freundlich model. The maximum sorption capacity of illite for Zn ions was determined from the Langmiur equation and found to be 11.38, 10.23 and 8.50 mg g-1 for smectite, illite and kaolinite soils, respectively. The dimensionless equilibrium parameter or separation factor (R-t) approaches zero as the C-o (initial concentration) value is increased, indicating that the adsorption of Zn(II) ions onto the clay fractions is less favourable. The Dubinin -Redushckevich (D-R) model was also applied equilibrium data to identify the type of sorption (chemically or physically) of Zn ions onto the soils. The bonding energies for ion-exchange mechanism (E, kJ mol-1) calculated from D-R parameter P (the activity coefficient related to mean adsorption energy) was found as 11.9, 10.6 and 10.1 kJ mol-1 for smectite, illite and kaolinite soils, respectively. The calculated E value in these soils indicated that the type of sorption of Zn ions onto the soils was predominantly chemical in nature according to typical ranges of bonding energy. From the obtained results, it can be concluded that the Zn ions adsorption on soils rich in smectite was higher compared with the adsorption on the other soils.

Keywords: Adsorption, Adsorption Isotherms, Aqueous-Solution, Behaviour, Capacity, Chemical, Clay, Co, Concentration, Data, Energy, Equilibrium, Freundlich, Freundlich Model, Illite, Ion Exchange, Ion-Exchange, Ionexchange, Ions, Isotherms, Kaolinite, Langmuir, Langmuir Model, Mechanism, Model, P, Purpose, Separation, Smectite, Soil, Soils, Sorption, Sorption Capacity, Value, Zinc, Zinc(II), Zn(II), Zn(II) Ions

? Mosavi, S.B., Karimi, S. and Feiziasl, V. (2010), Biosorption of lead and nickel by *Medicago sativa* (alfalfa) and datura from contaminated solution. *Asian Journal of Chemistry*, **22** (3), 1700-1704.

Full Text: 2010\Asi J Che22, 1700.pdf

Abstract: A series of batch adsorption experiment carried out to determine alfalfa and Datura (died biomass) biosorption capability to Pb and Ni removal from contaminated-solution. Data showed that these adsorbent could remove about 94-99 % Pb and 30-50 % Ni that exist in polluted solution. However. Datura has a great affinity and capacity to metal binding compared with alfalfa. For all the metal studies, binding speed to adsorbent is high and occurred within 5 min.

Keywords: Adsorption, Batch, Biomass, Biosorption, Cadmium, Capacity, Exopolysaccharide, Freundlich Equation, Heavy Metal, Heavy-Metals, Ions, Lead, Nickel, Phytofiltration, Removal, Zinc

? Kumari, K. (2010), Estimation of Arsenic(III) by adsorption and filtration from wastewater of Kanti thermal power, Muzaffarpur (India). *Asian Journal of Chemistry*, **22** (3), 1885-1888.

Full Text: 2010\Asi J Che22, 1885.pdf

Abstract: Adsorption process of As3+ from effluent of Kanti thermal power was found to be dependent on concentration of adsorbent and adsorbate, pH of solution, temperature, particle size of adsorbent and agitation speed of the system. It is observed that favourable conditions for arsenic removal are: equilibrium time of 50 min, pH of 7.5 and agitation speed of 190 rpm. The removal of As3+ has been found in the range of 87-95%.

Keywords: Adsorption, Alumina, Arsenic, Arsenic Removal, Equilibrium, India, pH, Removal, Spectrophotometry, System, Temperature, Wastewater

? Iqbal, N., Imran, M., Iqbal, J. and Mahmood, Z. (2010), Comparative studies on adsorption of Congo Red (CR) by low cost adsorbents prepared from different varieties of melon seeds. *Asian Journal of Chemistry*, **22** (3), 1993-2002.

Full Text: 2010\Asi J Che22, 1993.pdf

Abstract: The comparative ability of melon, water melon and musk melon seeds as adsorbents for Congo red dye in aqueous solution was studied. The experiments were done as batch processes. The main objective of the study was to investigate the influence of adsorbent dose, contact time, stirring speed, pH and temperature on adsorption process performance. Acidic pH (2), low temperature (20-30 degrees C) and low stirring speed (100-200 rpm) were found to be favorable conditions for the adsorption of Congo red dye by all the three adsorbents. The maximum adsorption 98.5% at 50 min, 98.2% at 30 min and 98.1% 40 min has been observed for melon, musk melon and water melon seeds, respectively at low adsorbent dose (0.15 g). The adsorption capacity of melon seed was found to be 23.10 mg, 21.23 mg/g for musk melon seed and 3.08 mg/g for water melon seed. The adsorption equilibrium process has been described well by using Langumir and Fruendlich adsorption isotherms. It can be concluded from this study that melon seed can best be used as an adsorbent for the removal of Congo red dye from its aqueous solution as compared to watermelon and musk melon seeds.

Keywords: Activated Carbon, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Isotherms, Agricultural Solid-Waste, Aqueous-Solution, Batch, Capacity, Coir Pith, Color Removal, Congo Red, Contact Time, Dye, Dyes, Equilibrium, Fly-Ash, Isotherms, Langmuir Isotherm, Melon Seeds, pH, Removal, Temperature, Wastewaters, Water

? Zheng, Z.W., Xiong, C.H. and Yao, C.P. (2010), Adsorption behaviour of XDA-200 resin toward p-nitrophenol in aqueous solution. *Asian Journal of Chemistry*, **22** (3), 2003-2012.

Full Text: 2010\Asi J Che22, 2003.pdf

Abstract: The adsorption behaviour of a colloidal solid particle of adsorption resin XDA-200 for p-nitrophenol was carried out using batch and column techniques. After characterization by direct photometric studies, the static and dynamic adsorption behaviour of p-nitrophenol onto adsorption resin XDA-200 was investigated. The adsorption was optimized with respect to pH, contact time and oscillation frequency. Maximum adsorption capacity was achieved from solution of pH 3-8 after 5.5 h agitation time. The adsorption behaviour of XDA-200 resin for p-nitrophenol obeyed both the Freundlich and Langmuir isotherms. The variation of the equilibrium constant ‘D’ with temperatures between 288 and 308 K yields values of Delta H = -7.12 kJ/mol, Delta S = 41.72J/(mol K), and Delta G(298) = -19.55 kJ/mol, respectively. The kinetics of adsorption follows the Brykina’s equation with the rate constant k(298) = 1.06 x 10(-4) s(-1).

Keywords: Acid Resin, Adsorption, Adsorption Capacity, Batch, Capacity, Characterization, Contact Time, Equilibrium, Freundlich, Isotherms, Kinetics, Langmuir, Langmuir Isotherms, Macroreticular Resins, pH, Removal, Resin, Thermodynamics, Transformation, Water, Xda-200 Resin

? Okumus, V., Oral, E., Basaran, D. and Onay, A. (2010), Simultaneous removal of indomethacine, papaverine and allopurinol from aqueous solution by using submerged aquatic plant nasturtium officinale. *Asian Journal of Chemistry*, **22** (3), 2081-2089.

Full Text: 2010\Asi J Che22, 2081.pdf

Abstract: Simultaneous removal of indomethacine, papaverine and allopurinol from aqueous solution by using submerged aquatic plant Nasturtium officinale biomass in high performance thin layer chromatography (HPTLC) was studied. Optimum biosorption conditions were determined as a function of contact time, pH, removal capacity of the amount of biomass and initial dry concentration. Experiments were performed in batch conditions. Concentrations of the drugs in the remaining solutions were simultaneously analyzed by HPTLC. Langmuir and Freundlich models were applied to describe the biosorption isotherm of the drugs by aquatic plant Nasturtium officinale biomass. According to the results, optimum parameters were found as 2.0 g biomass, pH:5.0 and 60 min contact time. Obtained from plots of Langmuir and Freundlich adsorption models, the highest drug uptakes were calculated from Langmuir isotherm and found to be 43.10, 39.68 and 38.61 mg/g for indomethacine, papaverine and allopurinol, respectively.

Keywords: Adsorption, Allopurinol, Atrazine, Batch, Biomass, Biosorption, Biosorption, Capacity, Ceratophyllum-Demersum, Contact Time, Copper, Freundlich, Heavy-Metal, HPTLC, Indomethacine, Isotherm, Langmuir, Langmuir Isotherm, Lead, Models, Myriophyllum-Spicatum, Nasturtium Officinale, Papaverine, pH, Removal, Sorption, Submerged Aquatic Plant, Water, Zn

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Full Text: [2010\Asi J Che22, 2319.PDF](2010/Asi%20J%20Che22,%202319.PDF)

Abstract: Removal of Cr(III) ions from waste waters is essential due to their toxicity. In the present study, batch sorption experiments were carried out to evaluate the performance of sepiolite in the removal of Cr(III) from aqueous solution. The sorption of Cr(III) from aqueous solution with sepiolite was studied at varying Cr(III) concentration, adsorbent dose, pH, contact time and temperature. The results obtained from equilibrium adsorption studies are fitted in various adsorption models such as Langmuir and Freundlich and the adsorption was well described by the Freundlich adsorption isotherm model. Thermodynamic parameters, free energy (Δ*G*º), enthalpy (Δ*H*º) and entropy (Δ*S*º) of adsorption were also calculated. Furthermore, the Lagergren-first-order; pseudo-second-order and the intraparticle diffusion models were used to describe the kinetic data. The experimental data fitted well the Lagergren-first-order.

Keywords: Adsorbent, Adsorbent Dose, Adsorption, Adsorption Isotherm, Adsorption Isotherm Model, Aqueous Solution, Batch, Chromium(III), Concentration, Cr(III), Cr(III) Ions, Data, Diffusion, Energy, Enthalpy, Entropy, Equilibrium, Experimental, Experiments, Freundlich, Freundlich Adsorption Isotherm, Intraparticle Diffusion, Ions, Isotherm, Isotherm Model, Kinetic, Kinetics, Langmuir, Mar, Model, Models, Performance, pH, Pseudo Second Order, Pseudo-Second-Order, Removal, Sepiolite, Solution, Sorption, Temperature, Thermodynamic, Thermodynamic Parameters, Thermodynamics, Time, Toxicity, Waste, Waste Waters, Waters

? Sen, M. and Dastidar, M.G. (2010), Adsorption-desorption studies on Cr(VI) using non-living fungal biomass. *Asian Journal of Chemistry*, **22** (3), 2331-2338.

Full Text: 2010\Asi J Che22, 2331.pdf

Abstract: The present study was undertaken in batch bioreactor with an aim to examine the Cr(VI) adsorption potential of the non-living fungal biomass of Aspergillus sp. from aqueous solution and also to find out the possibility of recovering of Cr(VI) from the metal concentrated fungal biomass. The optimum pH for adsorption of Cr(VI) was found to be 2.0. The Cr(VI) adsorbed increased with increasing initial metal concentration upto 500 mg L-1. A maximum removal of 27.5 mg g(-1) was observed at pH 2.0 at 500 mg L-1 initial Cr(VI) concentration. The adsorption equilibrium constants were obtained from both Freundlich and Langmuir adsorption isotherms. Desorption studies carried out using a number of desorbing agents indicated a maximum of 76 % of Cr(VI) was recovered from the metal concentrated biomass using 0.1 N sodium hydroxide solution within 0.5 h of time period.

Keywords: Adsorption, Adsorption Isotherms, Aspergillus sp., Batch, Biomass, Biosorption, Chromate Reduction, Chromium(VI), Cr(VI), Cr(VI) Adsorption, Desorption, Equilibrium, Freundlich, Freundlich And Langmuir Adsorption Isotherms, Ions, Isotherms, Langmuir, pH, Removal

? Shukla, P.C., Singh, S.N., Shukla, A. and Gupta, C.P. (2010), Studies on sorption tendency and permeability of different cold drinks across urinary bladder membranes. *Asian Journal of Chemistry*, **22** (4), 2579-2584.

Full Text: 2010\Asi J Che22, 2579.pdf

Abstract: Density, viscosity, pH, absorbance, water contents and hydrodynamic permeability of Aqua guard water, Aqua fina water, Mountain dew, Mirinda, Pepsi and Thums up have been measured across urinary bladder membranes of goat. It has been found that different coloured permeants are absorbed in the membrane texture and produce decisive effects in the permeability of the urinary bladder membranes. By keeping the permeants for a few hours in the urinary bladder, Mirinda and Mountain dew colourize the bladder surface with their colours while blackish colour is observed for Pepsi and black brownish tinge is observed in Thums up. Practically no change in colour is observed when bladder is immersed in urine solution. Absorption in the bladder surface will have adverse effects in structural properties of the bladder. Since urinary process may be defined as a process of development of pressure, sustenance of pressure and finally release of pressure, such studies are expected to be a great use in predicting physiological behaviour of the membrane in diverse situations.

Keywords: Absorption, Adsorption, Animal Membrane, Aqueous-Solutions, Development, Glucose, Hydrodynamic Permeability, Permeability, pH, Pressure, Sorption, Urea, Urinary Bladder Membrane, Urine, Water, Water Content

? Yang, B., Xu, Y.R., Dai, Y., Yang, G.Y. and Hu, Q.F. (2010), Study on the recovery of gold from the cyanide solutions with weakly basic anion exchange fiber as sorbent. *Asian Journal of Chemistry*, **22** (4), 2727-2730.

Full Text: 2010\Asi J Che22, 2727.pdf

Abstract: The recovery of gold from the cyanide solution with weakly basic anion exchange fiber as sorbent was studied. The effects of-different recovery parameters on gold recovery efficiency were studied in detail. The anion exchange fiber was packed into a PTFE cartridge and the gold can be absorbed on this cartridge when the cyanide solution passed through the cartridge. The absorbed gold was eluted from the cartridge with 2.0 mol L-1 nitric acid solution as eluant. By this. procedure, an enrichment factor above 500 was achieved and the routine ion do not interfered with the gold recovery. The absorption capacity was calculated to be 52 mg g(-1) for the gold standard solution and 46 mg g(-1) for the industrial gold cyanide leaching solution. This method can be applied to the recovery of gold from cyanide solution with good results.

Keywords: Absorption, Adsorption, Capacity, Cyanide, Cyanide Solution, Exchange, Fiber, Gel, Gold, Recovery, Recovery of Gold, Solid Phase Extraction, Sorbent, Tannin, Weakly Basic Anion Exchange Fiber

? Hema, M. and Srinivasan, K. (2010), Evaluation of coconut oilcake carbon as absorbent for nickel ion: Equilibrium and kinetic studies. *Asian Journal of Chemistry*, **22** (4), 2965-2981.

Full Text: 2010\Asi J Che22, 2965.pdf

Abstract: The adsorption behaviour of coconut oilcake activated carbon (COCAC) for nickel ion removal from wastewater has been investigated, as a function of appropriate equilibrium time, amount of adsorbent, concentration of adsorbate and pH using a batch system. The efficiency of COCAC was compared with commercial activated carbon (CAC). Studies showed that pH of wastewater affected nickel adsorption because of removal efficiency increased with increasing Solution pH but after 5, the removal efficiency remains constant. The adsorption of Ni(II) was found to be maximum for COCAC (96.83%) than CAC (74.8%), at pH 7, contact time 30 min and initial Ni(II) concentration of 63 mg/L. The adsorption data fit well with Temkin isotherm model, the adsorption capacity W calculated from the Langmuir isotherm was 555.56 and 30.77 mg/g for COCAC and CAC, respectively. The Freundlich constant N-f indicates beneficial adsorption. Kinetic studies show better applicability of second-order-kinetic model. Desorption studies were performed with dilute hydrochloric acid. Quantitative recovery of the metal ion is possible. The mechanism of adsorption seems to be ion exchange.

Keywords: Activated Carbon, Activated Carbon, Adsorption, Adsorption Capacity, Aqueous-Solution, Batch, Cadmium, Capacity, Carbon, Contact Time, Desorption, Equilibrium, Exchange, Freundlich, Heavy-Metals, Hydrochloric Acid, Ion Exchange, Isotherm, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Model, Ni(II), Ni(II) Adsorption, Nickel, pH, Removal, System, Temkin, Temkin Isotherm, Waste, Wastewater, Zinc

? Tharanitharan, V. and Srinivasan, K. (2010), Kinetic and equilibrium studies of removal of Pb(II) and Cd(II) ions from aqueous solution by modified duolite XAD-761 resins. *Asian Journal of Chemistry*, **22** (4), 3036-3046.

Full Text: [2010\Asi J Che22, 3036.PDF](2010/Asi%20J%20Che22,%203036.PDF)

Abstract: Complete mixing of phenol-formaldehyde polymeric resin (Duolite XAD-761) with anionic surfactant-sodium dioctyl sulphosuccinate (SDOSS) and EDTA-disodium salt (chelating agent) in an aqueous solution led to the formation of a modified resin for the removal of Pb(II) and Cd(II) ions from aqueous solution. The effect of experimental parameters such as pH, contact time and modified resin dosage on the Pb(II) and Cd(II) ions removal was studied. The obtained data were fitted with the Langmuir and Freundlich equations to describe the equilibrium isotherms. The kinetic data were fitted with the pseudo-first-order and pseudo-second-order models. It was found that pH played a major role in the adsorption process. The maximum adsorption capacity for Pb(II) and Cd(II) on modified resin calculated from Langmuir isotherm was found to be 46.66 and 59.52 mg g-1, respectively. The optimum pH range for the removal of Pb(II) and Cd(II) was found to be 4-7 and 4-8, respectively. Langmuir isotherm model was found to best describe the experimental data [R-2 >= 0.999 for Pb(II) and R-2 >= 0.954 for Cd(II)]. The kinetic rates were best fitted to the pseudo-second-order model [R-2 >= 0.999 for Pb(II) and R-2 = 1 for Cd(II)]. Thermodynamic study showed the adsorption was a spontaneous process. The metal ions could be successfully recovered from the modified resin by treatment with 7-8 % NaCl. The modified resins thus regenerated could be used again to remove the heavy metal ions. Based on all results, it can also be concluded that it can be evaluated as an alternative adsorbent for removing Pb(II) and Cd(II) from aqueous solution.

Keywords: Acid, Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Adsorption Isotherms, Alternative, Aqueous Solution, Biosorption, Cadmium, Capacity, Cd(II), Cd(II) Ions, Cd(II) Removal, Chromium(VI), Data, Duolite XAD-761, EDTA, Equilibrium, Equilibrium Isotherms, Experimental, Freundlich, Heavy Metal, Heavy Metal Ions, Ions, Isotherm, Isotherm Model, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Langmuir Isotherm Model, Metal, Metal Ions, Metals, Mixing, Model, Models, Modified, NaCl, Pb(II), Pb(II) Removal, pH, Polymeric, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Model, Range, Rates, Removal, Resin, Resins, Role, Salt, Sodium Dioctyl Sulphosuccinate, Solution, Surfactant, Thermodynamic, Thermodynamic Study, Time, Treatment, Waste, Water

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Full Text: 2010\Asi J Che22, 3601.pdf

Abstract: Activated carbon prepared from Syzigium jambolanum nut was found to be useful for the removal of mercury(II) as [HgCl4] from wastewater. Quantitative removal of 99% takes place when batch studies were done at an optimal carbon dose of 0.1 g pH of 5 and equilibration time of 3 h The adsorption follows Freundlich and Langmuir adsorption isotherms and obeys first order rate equation The efficiency of Syzigium jambolanum carbon was compared with a commercial activated carbon.

Keywords: Activated Carbon, Adsorption, Adsorption Isotherms, Batch, Carbon, Commercial Activated Carbon, Freundlich, Hg(II), Isotherm, Isotherms, Kinetics, Langmuir, Mercury(II), pH, Removal, Syzigium Jambolanum Nut Carbon, Wastewater

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Full Text: [2010\Asi J Che22, 3675.pdf](2010/Asi%20J%20Che22,%203675.pdf)

Abstract: Activated carbons prepared from agro industrial waste by products such as coconut and neem oilcake, by thermal activation at 800ºC, were used as efficient sorbents for the removal of nickel ion from wastewater The sorption conditions, such as pH. adsorbent dose and concentration of nickel(II) were examined The coconut oilcake activated carbon (COCAC) shows more adsorption efficiency than neem oilcake activated carbon (NOCAC) The kinetic processes of Ni(II) adsorption on to activated carbons were described by applying pseudo-first-order, pseudo-second-order and reversible pseudo-first-order rate equations The kinetic data was found to follow pseudo-second-order rate equation for both carbons. The equilibrium data were studied by Freundlich. Langmuir and Temkin isotherm. Based on regression coefficient. Temkin isotherm model was found to be more suitable for these carbons.

Keywords: Activated Carbon, Activated Carbons, Activation, Adsorbent, Adsorbent Dose, Adsorption, Agricultural Waste, Aqueous-Solution, Biosorption, Cadmium, Carbon, Coconut Oilcake Carbon, Concentration, Copper(II), Data, Efficiency, Equilibrium, Freundlich, Heavy-Metals, Ions, Isotherm, Isotherm Model, Isotherm Models, Kinetic, Kinetics, Kinetics, Langmuir, Model, Neem Oilcake Carbon, Ni(II), Ni(II) Removal, Nickel, Nickel(II), pH, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Pseudo-Second-Order Rate, Regression, Removal, Sorbents, Sorption, Temkin Isotherm, Thermal Activation, Waste, Wastewater

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Full Text: [2010\Asi J Che22, 3936.pdf](2010/Asi%20J%20Che22,%203936.pdf)

Abstract: The activated carbon obtained from pine cone was investigated as a new adsorbent to remove copper(II) ion from aqueous solution The adsorption process of copper(II) ion was carried Out in a hatch mode and the effects of adsorbent concentration (0.25-1.00 g/100 mL). initial pH’s (2.0-6.0) and initial metal ion concentrations (25-100 mg/L) were investigated. Maximum removal capacity of the copper(II) ion from aqueous solutions was achieved at pH 5.0 Adsorption data was well fitted to the Langmuir and Freundlich isotherms. Langmuir monolayer capacity was a value of 15.05 mg/g The results in this study indicate that the activated carbon obtained from pine cone can be an effective adsorbent for removal of copper(II) ions from aqueous solution.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption, Adsorption Isotherm, Aqueous Solution, Aqueous Solutions, Biosorption, Cadmium, Capacity, Carbon, Concentration, Copper(II), Copper(II) Ions, Cu(II), Data, Equilibrium, Freundlich, Heavy-Metals, Ions, Isotherms, Langmuir, Langmuir and Freundlich Isotherms, Metal, Mode, Monolayer, pH, Pine Cone, Removal, Solution, Solutions, Sorption, Thermodynamic Parameters, Value, Water

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Full Text: 2010\Asi J Che22, 4003.pdf

Abstract: Comparison of caffeine and theophylline adsorption isotherm on C-18 column using Ionic liquids as mobile phase additives and the competitive adsorption of the two compounds were investigated The experimental parameters of the equilibrium isotherms were determined eta Langmuir isotherm model. The effects of the concentrations and the alkyl chain length of imidazolium ionic liquids on C-18 particles were investigated.

Keywords: Acids, Adsorption, Adsorption Isotherm, Behavior, Caffeine, Column, Compounds, Equilibrium, Ionic Liquids, Isotherm, Isotherms, Langmuir, Langmuir Isotherm, Mobile-Phase, Model, Molecular Imprinted Polymer, Retention, Theophylline

? Rubavathi, D.S.R., David, S.T. and Balakumar, S. (2010), Removal of Rhodamine-B from aqueous solution by adsorption using water hyacinth ash. *Asian Journal of Chemistry*, **22** (6), 4304-4310.

Full Text: 2010\Asi J Che22, 4304.pdf

Abstract: The use of cheap and ecofriendly adsorbents have been studied as an alternative substitution of activated carbon for the removal of dyes from wastewater. Adsorbents prepared from water hyacinth ash are used to remove the rhodamine-B from aqueous solution. The effect of various experimental parameters has been investigated using a batch adsorption technique to obtain information on treating effluents from the dye industry. The extent of dye removal increased with decrease in the initial concentration of the dye and also increased with increase in contact time and amount of adsorbent. Adsorption data were modeled using the Freundlich adsorption isotherm and first order kinetic equation Lagergren equation.

Keywords: Activated Carbon, Adsorbents, Adsorption, Adsorption Isotherm, Batch, Carbon, Color Removal, Contact Time, Dye, Dye Removal, Dyes, Equilibrium, Freundlich, Isotherm, Kinetic, Lagergren Equation, Removal, Rhodamine B, Rhodamine-B, Wastewater, Water, Water Hyacinth, Water Hyacinth Ash

? Simi, A. and Azeeza, V. (2010), Removal of Methylene Blue dye using low cost adsorbent. *Asian Journal of Chemistry*, **22** (6), 4371-4376.

Full Text: 2010\Asi J Che22, 4371.pdf

Abstract: Adsorption is an impotent method for colour removal from waste-water. Batch experiments were conducted to assess the potential for removal of methylene blue from aqueous solution by adsorption on to Jack fruit carbon. The equilibrium isotherm was determined and plotted to obtain the Langmuir constants, the Freundlich constants and Peterson constants. It was observed that very short contact time upto 30 min was required for the system to attain equilibrium. The maximum adsorption capacity of Jack fruit carbon was found to be 0.1047 mg of dye/g of Jack fruit carbon.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Aqueous-Solutions, Batch Experiments, Capacity, Carbon, Color, Contact Time, Dye, Effluent, Equilibrium, Freundlich, Isotherm, Jack Fruit Carbon, Kinetics, Langmuir, Methylene Blue, Ozonation, Reactive Dyes, Removal, System, Wastewater

? Pang, X.Y. and Lin, R.N. (2010), Adsorption mechanism of expanded graphite for oil and phenyl organic molecules. *Asian Journal of Chemistry*, **22** (6), 4469-4476.

Full Text: 2010\Asi J Che22, 4469.pdf

Abstract: Expanded graphite shows higher adsorption capacity for oils (e.g., salad oil and thermal oil) than for phenyl organic molecules (e.g., phenol, benzoic acid, benzene sulfonic acid, p-methylbenzene sulfonic acid). To illustrate their different adsorption mechanism, adsorption capacities of expanded graphite for these pollutants are firstly detected. And then stepwise adsorption for oils is carried out with expanded graphite which has been saturated first by phenyl organic molecules. Then the difference between stepwise adsorbance of oil is checked with deviation analysis. Scanning electronic microscopy (SEM) analysis is used to show structure difference of expanded graphite adsorbed different adsorbates. It is testified the adsorption isotherms of phenyl organic molecules on expanded graphite are all type II. Deviation analysis for stepwise adsorbances of oil shows no statistical significance. Expanded graphite saturated first by phenyl organic molecules, still has an average adsorption capacity of 79 g/g for salad oil or thermal oil and it does not change with the initial phenyl organic molecules concentration. Scanning electronic microscopy photos illustrate the adsorption of oil on expanded graphite is mainly filling. In the adsorption of phenyl organic molecules, there is severe breakage of the V-type pore and shrinkage of the particles.

Keywords: Adsorption, Adsorption Capacity, Adsorption Isotherms, Adsorption Mechanism, Analysis, Benzene, Capacity, Exfoliated Graphite, Expanded Graphite, Graphite, Heavy Oils, Isotherms, Mechanism, Molecules, Oil, Phenol, Phenyl Organic Molecules, Pore, Recovery, SEM, Sorption Capacity, Stepwise Adsorption

? Shastri, S.S. and Bhake, A.B. (2010), Adsorption of phenols from aqueous phase on activated carbon-comparative study. *Asian Journal of Chemistry*, **22** (6), 4487-4495.

Full Text: 2010\Asi J Che22, 4487.pdf

Abstract: The most hazard which humanity faces today is environmental pollution. The three natural media water, air and soil are receiving pollutants in ever increasing volume. Increasing environmental and scientific awareness and concern are bound to expand the role of granular activated carbon as the most efficient, broad spectrum and economical technology at tertiary level for scavenging refractory organics from potable and waste water. In the present work adsorption of some priority pollutants from their single and multi-component aqueous solutions on to various grades of granular activated carbons are studied. SEM and FTIR studies indicate the presence of various surface groups. The effect of physico-chemical parameters associated with the adsorbent on the adsorption equilibrium and adsorbate removal rate was also studied. Adsorption equilibrium and kinetic experiments are carried out in a batch reactor.

Keywords: Activated Carbon, Adsorption, Adsorption Equilibrium, Aqueous Solutions, Batch, Batch System Adsorption Isotherm, Carbon, Equilibrium, FTIR, Kinetic, Pollution, Removal, SEM, Soil, Technology, Wastewater Treatment, Water

? Tilaki, R.A.D. (2010), Removal of textile dye by bentonite and organo-bentonite. *Asian Journal of Chemistry*, **22** (6), 4559-4566.

Full Text: [2010\Asi J Che22, 4559.pdf](2010/Asi%20J%20Che22,%204559.pdf)

Abstract: In this study. bentonite was modified by alkyl dimethyl benzyl ammonium chloride (ADBAC) in order to obtain an alternative sorbent for dye removal from textile effluents. Two dyes using in textile industry were examined in this study. Aqueous solutions prepared from disperse blue 56 and pigment blue 60 were used and batch kinetic and isotherm experiments were carried out. Data were evaluated for applicability to the Langmuir and Freundlich isotherm models and the removal capacity of organo-bentonite was compared with that of ordinary bentonite. The adsorption was reached in equilibrium within 6 h of contact time. Adsorption kinetics obeys a Pseudo-second order reaction. Adsorption isotherms were fitted with Langmuir and Freundlich models. Corresponding constants of both models were calculated. Adsorption efficiencies were increased with increasing the sorbents dose. Results indicated that 85 and 78 % removal of disperse blue and pigment blue, respectively by organo-bentonite compared with a removal of 52 and 45 % achieved by ordinary bentonite. Adsorption capacity of bentonite for dye removal can be effectively increased by modification with commercial cationic detergent.

Keywords: Adsorbents, Adsorption, Adsorption Capacity, Adsorption Isotherms, Adsorption Kinetics, Alternative, Ammonium, Aqueous Solutions, Batch, Bentonite, Capacity, Chloride, Clay, Color Removal, Detergent, Disperse Blue, Dye, Dye Removal, Dyes, Effluents, Equilibrium, Experiments, Freundlich, Freundlich Isotherm, Isotherm, Isotherms, Kinetic, Kinetic-Models, Kinetics, Langmuir, Models, Modification, Modified, Organo-Bentonite, Organo-Bentonite And Adsorption, Organobentonite, Pigment, Pigment Blue, Pseudo-Second Order, Pseudo-Second-Order, Removal, Solutions, Sorbent, Sorbents, Sorption, Textile Effluents, Waste-Water

? Sivasankari, C., Mahadevan, M. and Arulanantham, A. (2010), Comparative study of powdered activated alumina with granular polymer-agglomerated alumina in fluoride removal from drinking water. *Asian Journal of Chemistry*, **22** (6), 4663-4670.

Full Text: [2010\Asi J Che22, 4663.pdf](2010/Asi%20J%20Che22,%204663.pdf)

Abstract: The characteristics of commercially available powdered activated alumina for defluoridation of drinking water in batch process have been investigated. The powdered form of activated alumina possesses enhanced defluoridation capacity compared to granular form but could not be used in column process as it is reported to cause pressure drop in column operations. To overcome this drawback powdered activated alumina was agglomerated with neutral and nontoxic polymer poly(vinyl acetate) to get the granular polymer-agglomerated alumina. Using synthetic fluoride solution the effect of pH, adsorbent dose, kinetics of adsorption process and adsorption isotherm for fluoride removal by granular polymer-agglomerated alumina were investigated in batch experiments and compared with that of powdered activated alumina. Column experiments were performed using granular polymer-agglomerated alumina to find out the effect of co-existing anions in water and the suitability of the adsorbent for repeated cycles after regeneration.

Keywords: Acetate, Activated Alumina, Adsorbent, Adsorbent Dose, Adsorption, Adsorption Isotherm, Alumina, Anions, Batch, Batch Experiments, Batch Process, Capacity, Characteristics, Co-Existing Anions, Column, Defluoridation, Donnan Dialysis, Drinking Water, Equilibrium, Experiments, Fluoride, Fluoride Removal, Granular Polymer-Agglomerated Alumina, Isotherm, Kinetics, Kinetics of Adsorption, pH, Polymer, Powdered Activated Alumina, Pressure, Pressure Drop, Regeneration, Removal, Solution, Water

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Full Text: 2010\Asi J Che22, 4703.pdf

Abstract: By a simple ion exchange process. Na+ in the bentonite structure can be replaced by cationic detergent molecules and produce organo-bentonite. By this process the surface properties of bentonite can be modified and the produced organo-bentonite can be used for removal of organic contaminants from water. In this study bentonite was treated with alkyldimethylbenzyl ammonium chloride (ADBAC). In sorption experiments, each batch test sample was prepared with 0.1, 0.5 and 1.0 g bentonite (B) and modified bentonite (MB) separately together with aqueous phenol solution. Adsorption of 10 and 50 mgL(-1) phenol on to bentonite and modified bentonite were investigated separately. Batch kinetic and isotherm studies were carried out to evaluate the effect of contact time, initial concentration and pH. Removal of 10-100 mg L-1 phenol, by 10 gL(-1) ordinary bentonite was 10-20 % whereas in the same condition removal by synthesized organo-bentonite, was 60-80 %. Adsorption was reached in equilibrium within 3 and 6 h for organo bentonite and bentonite, respectively. Adsorption kinetics obeys a first order reaction. Adsorption isotherms were fitted with Langmuir and Freundlich models. Corresponding constants of both models were calculated. Adsorption efficiencies were slightly increased with increasing the sorbents dose. Optimum pH for using synthesized sorbent was 7. The bentonite may function as a recyclable surfactant support for the adsorption and subsequent combustion of organic pollutants.

Keywords: Adsorption, Adsorption, Adsorption Isotherms, Adsorption Kinetics, Aqueous-Solutions, Batch, Chlorophenols, Competitive Sorption, Complexes, Contact Time, Contaminants, Desorption, Equilibrium, Exchange, Freundlich, Ion Exchange, Isotherm, Isotherm Studies, Isotherms, Kinetic, Kinetics, Langmuir, Low Cost Sorbent, Models, Modified Clay, Molecules, Montmorillonite, Organo-Bentonite, pH, Phenol, Removal, Sorbent, Sorption, Surfactant, Water

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Full Text: 2010\Asi J Che22, 5041.pdf

Abstract: Present research work deals with the bleaching of neutral violet dye have been carried out in presence of adsorbent guava leaf powder. The source used for energy is visible light. Various parameters like dosage of adsorbent, pH, concentration of neutral violet dye etc., are studied. Experiments are carried out to remove the neutral violet dye stuff by using adsorbent guava leaf powder. It is observed that the dye concentration increases with the decrease in bleaching rate. For an amount of 0.10 g at a pH value of 9 maintained of adsorbant. The bleaching rate is maximum and found to be decreasing with increasing pH and amount of adsorbent. The maximum bleaching rate is observed at the optimum time at 90 min. Neutral violet dye was removed up to 91.3 % by using adsorbant guava leaf powder.

Keywords: Adsorption, Agricultural Solid-Waste, Coir Pith, Digital pH Meter and Sigma Plots, Dye, Guava Leaf Powder, Leaf, Light, Neutral Violet Dye Stuff, Orange, pH, Removal, Research, UV- Spectrophotometer, Water

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Full Text: [2010\Asi J Che22, 5093.pdf](2010/Asi%20J%20Che22,%205093.pdf)

Abstract: The use of cheap, high efficiency and ecofriendly adsorbent has been studied as an alternative source of activated carbon for the removal of dyes from wastewater. This study investigates the use of activated carbon prepared from Camel thorn plant for the removal of methyl orange dye from aqueous solution. The effect of various experimental parameters such as contact time, temperature, initial dye concentration and dose of adsorbent were studied. The results showed that the adsorption of methyl orange as the amount of adsorbent increased, the percentage of dye removal increased accordingly but it decreased with the increase in initial dye concentration and solution temperature. The adsorption kinetics was found to follow pseudo-second-order rate kinetic model, (R-2>0.99). Langmuir and Freundlich isotherms were used to analyze the equilibrium data at different temperatures. The apparent thermodynamic parameters were calculated and the adsorption process was found to be spontaneous and exothermic.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Kinetics, Alternative, Aqueous Solution, Camel Thorn, Carbon, Concentration, Data, Dye, Dye Removal, Dyes, Efficiency, Equilibrium, Exothermic, Experimental, Freundlich, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Langmuir And Freundlich Isotherms, Methyl Orange, Methylene Orange, Model, Plant, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Rate, Removal, Removal of Dyes, Solution, Sorption, Source, Temperature, Thermodynamic, Thermodynamic Parameters, Wastewater

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Full Text: 2010\Asi J Che22, 5223.pdf

Abstract: The aim of this study is to investigate the preparation of low-cost activated carbon from Ipomoea batatas (IBC) and to explore their potential application for the removal of heavy metals from aqueous solutions. Conventional physical (water vapour) activation was used for synthesizing the adsorbent. The obtained carbon was employed for the removal of Mn(II) from aqueous solutions at different initial concentrations and pH values. Adsorption of Mn(II) ion follows Langmuir isotherm, the maximum loading capacity for Mn(II) ion is 23.4 mg g(-1) According to the experimental data it can be inferred that the basic character of the surface, i.e., the high content of basic groups, favours adsorption of ion. Regarding manganese adsorption herein obtained carbon presented higher uptake adsorption than that of activated carbons reported in the literature.

Keywords: Activated Carbon, Adsorption, Aqueous Solutions, Capacity, Carbon, Heavy Metals, Ipomoea Batatas, Iron, Isotherm, Langmuir, Langmuir Isotherm, Literature, Manganese, Mn(II), Mn(II) Removal, pH, pH, Removal, Sorption, Water

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Full Text: 2010\Asi J Che22, 5261.pdf

Abstract: The aim of present investigation is to study adsorption of acetic acid on Plectonema gracillimum (ZOpf) Hansgirg. The effect of certain parameters on adsorption has been studied. Applicability of Fruendlich adsorption isotherm, Langmuir adsorption isotherm has been tested. Various thermodynamic parameters such as Delta G degrees, Delta H degrees and Delta S degrees are reported. The adsorption power of Plectonema gracillimum (ZOpf) Hansgirg is calculated using batch adsorption process.

Keywords: Acetic Acid, Adsorption, Adsorption Isotherm, Batch, Isotherm, Langmuir, Langmuir Adsorption Isotherm, Plectonema Gracillimum, Thermodynamic, Thermodynamic Parameters, Water

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Full Text: [2010\Asi J Che22, 5447.pdf](2010/Asi%20J%20Che22,%205447.pdf)

Abstract: Carbon was derived from gingelly oil cake by thermal activation method and its Pb(II) removal capacity was compared with commercial activated carbon. The effect of experimental parameters such as pH, initial concentration, contact time and adsorbents dosage were studied. The data were fitted with Langmuir, Freundlich and Temkin models to describe the equilibrium isotherms. The kinetic data fitted well with Lagergren pseudo first order and pseudo second order models. The maximum adsorption capacity for Pb(II) calculated from Langmuir isotherm was found to be 105.26 mg/g for thermally activated carbon. R-2 values showed that the experimental data fit well with Freundlich isotherm and pseudo second order kinetics. FT-IR analysis was used to obtain information on the nature of possible interaction between adsorbent and metal ions. SEM images confirmed the adsorption of Pb(II) onto thermally activated gingelly oil cake adsorbent through the morphological observation. Thermodynamic study further showed the feasibility and spontaneous nature of the adsorption. The carbon was also tested for the removal of Pb(II) from lead battery synthetic wastewater. Therefore, it has been concluded that carbon derived from gingelly oil cake can be evaluated as an alternative adsorbent to treat wastewater containing Pb(II) ions.

Keywords: Activated Carbon, Activation, Adsorbent, Adsorbents, Adsorption, Adsorption Capacity, Adsorption Characteristics, Adsorption Isotherms, Alternative, Analysis, Aqueous-Solution, Biomass, Biosorption, Capacity, Carbon, Coconut Shells, Concentration, Data, Equilibrium, Equilibrium Isotherms, Experimental, Feasibility, First, First Order, Freundlich, Freundlich Isotherm, FT-IR, FTIR, FTIR Analysis, Gingelly Oil Cake, Heavy-Metals, Information, Interaction, Ions, Isotherm, Isotherms, Kinetic, Kinetics, Langmuir, Langmuir Isotherm, Lead, Lead(II), Metal, Metal Ions, Models, Observation, Pb(II), Pb(II) Ions, Pb(II) Removal, pH, Pseudo First Order, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-First-Order, Pseudo-Second-Order, Removal, Second Order, Second Order Kinetics, Second-Order, SEM, Sorption, Thermal Activation, Thermally Activated Carbon, Thermally Activated Gingelly Oil Cake, Thermodynamic, Thermodynamic Study, Waste, Wastewater

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Full Text: [2010\Asi J Che22, 5649.pdf](2010/Asi%20J%20Che22,%205649.pdf)

Abstract: In this study, peanut shell was utilized as an adsorbent for the adsorption of basic red 2 from aqueous solution. Adsorption experiments were performed as a function of contact time, initial dye concentration, temperature and pH. While the amount of the dye adsorbed onto peanut shell was increasing with increasing contact time, initial dye concentration, it decreased with increasing solution temperature. The most adsorption was observed at pH 5. The maximum adsorptions were between 84.70 and 98.86% under all the experimental conditions studied such as concentration, pH and temperature. Equilibrium data was consistent with Freundlich isotherm. Adsorption kinetic was in the best agreement with the pseudo-second order model. Furthermore, SEM and FT-IR studies of peanut shell were performed and the results obtained were interpreted. Column adsorption studies were also done. The percentages of basic red 2 adsorbed in column were more than 99%.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Kinetic, Aqueous Solution, Aqueous-Solution, Basic Red 2, Column, Concentration, Data, Dye, Dyes, Equilibrium, Experimental, Experiments, Freundlich, Freundlich Isotherm, FT-IR, FTIR, Ftir Studies, Function, Isotherm, Kinetic, Kinetics, Kinetics, Methylene-Blue, Model, Peanut Shell, Perlite, pH, Pseudo Second Order, Pseudo-Second Order, Pseudo-Second Order Model, Pseudo-Second-Order, Removal, Safranin, SEM, Solution, Sorption, Temperature, Waste

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Full Text: 2010\Asi J Che22, 6117.pdf

Abstract: Amberlit XAD-16 was functionalized using dithioethylenediamine as a ligand and characterized by elemental analysis and FTIR spectroscopy. The effects of contact time, pH, electrolyte and the concentration of eluent on separation and preconcentration of Pb(II), Cr(III) and Cr(VI) were studied. In addition, the batch capacity for each ion was determined under the optimum conditions. The preconcentration yields of Pb(II), Cr(III) and Cr(VI) were found to be 96.60 +/- 3.02, 102.20 +/- 3.00 and 100.64 +/- 2.24 %, respectively, with 500 times preconcentration factor under the optimum conditions. The speciation of Cr(III)-Cr(VI) was studied, it was determined that Cr(III) separated in 93.24 +/- 2.21 % yield from the solution containing Cr(III)-Cr(VI) by using Amberlit XAD-16-dithioethylenediamine and Cr(VI) remained in the solution at pH 4, while Cr(VI) separated in 101.43 +/- 3.09 % yield from the solution containing Cr(III)-Cr(VI) and Cr(III) remained in the solution. at pH 7.50 by using Amberlit XAD-16-dithioethylenediamine-Pb(II).

Keywords: Amberlite Xad-16, Analysis, Atomic-Absorption Spectrometry, Batch, Capacity, Contact Time, Copper(II), Cr(III), Cr(VI), Dithioethylenediamine, Ftir, Ftir Spectroscopy, Lead(II), Metal-Ions, Online Matrix Separation, Pb(II), pH, Plasma-Mass Spectrometry, Preconcentration, Removal, Resin, Sorption, Speciation, Trace, Water, Zinc(II)

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Full Text: 2010\Asi J Che22, 6245.pdf

Abstract: A new adsorbent was prepared by modifying microwave pretreated corncob with succinic anhydride. The microwave pretreated corncob and un-pretreated corncob were both modified with succinic anhydride to get the products C 1 and C 2 from original corncob (C 0). Mass per cent gains (MPG) of both products were tested. The adsorptions of C 1, C 2 and CO with Zn2+ were studied. SEM, XPS and FTIR were utilized to investigate the structure and morphology of C 1. The results showed that C 1 had a fold phase covered with carboxyl groups which resulted in a high adsorption of metal ion. In the range of experiments, mass per cent gains of C 1 achieved 41.4 % in optimal microwave conditions, which exhibited an increase of 12.9 % from C 2 (28.5 %). After being treated with Zn2+ at room temperature, C 1 could reach a saturated adsorption capacity of 2.028 mmol/g, increased 1.747, 0.457 mmol/g in relation to C 0(0.281 mmol/g) and C 1(1.773 mmol/g), respectively. Its adsorption followed isotherm of Langmuir. The results indicated that the adsorption properties of C 1 were improved obviously. It can be used as a potential metal ion adsorbent.

Keywords: Adsorption, Adsorption Capacity, Capacity, Co, Corncob, Ftir, Isotherm, Langmuir, Microwave, Sem, Succinic Anhydride, Temperature, Xps

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Full Text: [2010\Asi J Che22, 6289.pdf](2010/Asi%20J%20Che22,%206289.pdf)

Abstract: In the present investigation, gum arabic (GA) and glycidyl methacrylate modified gum arabic (GMA-GA) were assessed as biosorbents for the removal of Hg(II) from aqueous solutions. For chemical modification of gum arabic with glycidyl methacrylate, an appropriate mixture of water and DMSO was used to dissolve gum arabic and glycidyl methacrylate. The approving of chemical modification and the presence of glycidyl methacrylate groups in the modified structure of gum arabic (GMA-GA) was confirmed by diffuse reflectance spectroscopy (DRS). The equilibrium studies are systematically carried out in a batch process, covering various process parameters that include agitation time, adsorbent dosage and pH of the aqueous solution. It was observed in adsorption and desorption tests that GMA-GA showed significant pH dependence, which affected the removal efficiency, robustly. Adsorption behaviour is found to follow Freundlich and Langmuir isotherms. The adsorption mechanism is described by a pseudo second order kinetics. A regeneration study was also carried out.

Keywords: Acrylamide, Adsorbent, Adsorbent Dosage, Adsorbents, Adsorption, Adsorption Mechanism, Agitation, Aqueous Solution, Aqueous Solutions, Batch, Batch Process, Behaviour, Biosorbents, Cashew Gum, Chemical, Chemical Modification, Chromium(VI), Copper(II), Desorption, Diffuse Reflectance Spectroscopy, Drs, Efficiency, Equilibrium, Equilibrium Studies, Freundlich, Glycidyl Methacrylate, Gum Arabic, Heavy Metal, Hg(II), Hydrogel, Investigation, Ions, Isotherms, Kinetics, Langmuir, Langmuir Isotherms, Mechanism, Membranes, Modification, Modified, pH, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second-Order, Regeneration, Removal, Removal Efficiency, Second Order, Second Order Kinetics, Second-Order, Solution, Solutions, Spectroscopy, Structure, Waste-Water, Wastewater Treatment, Water

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Full Text: 2010\Asi J Che22, 6503.pdf

Abstract: The removal of cadmium from aqueous solution on the Na-bentonite has been studied under static conditions. Experiments were carried out as a function of solution pH, dosage of Na-bentonite, contact time. The adsorption equilibrium for cadmium onto Na-bentonite is reached in 120 min. The adsorption of cadmium is pH dependent in the pH range 2-8. The kinetic process of adsorption can be described by the pseudo-second-order kinetic equation satisfactorily.

Keywords: Adsorption, Cadmium, Contact Time, Equilibrium, Heavy-Metals, Ions, Kinetic, Kinetics, Kinetics, Montmorillonite, Na-Bentonite, Peat, pH, Removal, Sorption, Waste-Water

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Full Text: [2010\Asi J Che22, 6503.pdf](2010/Asi%20J%20Che22,%206503.pdf)

Abstract: The removal of cadmium from aqueous solution on the Na-bentonite has been studied under static conditions. Experiments were carried out as a function of solution pH, dosage of Na-bentonite, contact time. The adsorption equilibrium for cadmium onto Na-bentonite is reached in 120 min. The adsorption of cadmium is pH dependent in the pH range 2-8. The kinetic process of adsorption can be described by the pseudo-second-order kinetic equation satisfactorily.

Keywords: Adsorption, Adsorption Equilibrium, Aqueous Solution, Cadmium, Equilibrium, Function, Heavy-Metals, Ions, Kinetic, Kinetic Equation, Kinetics, Kinetics, Montmorillonite, Na-Bentonite, Peat, pH, pH-Dependent, Pseudo Second Order, Pseudo-Second-Order, Pseudo-Second-Order Kinetic Equation, Removal, Solution, Sorption, Waste-Water

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Full Text: 2010\Asi J Che22, 6625.pdf

Abstract: Dyes contamination in ground and aquatic environment has become a serious menace today. Removal of dyes from wastewater before discharging to environment is necessary for the safety of living beings. Dyes are difficult to degrade due to complex structures. Different techniques are used to remove the dyes from wastewater. Among these techniques, biosorption has emerged as an effective and ecofriendly technique. Biosorption of dyes using different biomaterials has been investigated by different researchers. This review article gives an insight into the removal of different synthetic direct dyes using different biomaterials from aqueous solution. The effect of various process parameters such as pH, biosorbent dose, initial dye concentration, sorbent particle size, agitation time, temperature, ionic strength etc. has been discussed.

Keywords: Activated Carbon, Agricultural Waste, Biosorbent, Biosorption, Colour Removal, Complex, Congo Red, Contamination, Corynebacterium-Glutamicum, Dye, Dyes, Environment, Fly-Ash, Orange Peel, Palm-Fruit Bunch, pH, Reactive Black-5, Removal, Researchers, Safety, Simulated Waste-Water, Sorbent, Synthetic Dyes, Temperature, Treated Biomass, Wastewater

? Chaudhari, U.E. (2010), Evaluation of adsorption efficiency of ferronia elefuntum fruit shell for methylene blue from aqueous solution. *Asian Journal of Chemistry*, **22** (9), 6722-6728.

Full Text: Asi J Che22, 6722.pdf

Abstract: Methylene blue adsorption from an aqueous solution on to Ferronia elefuntum fruit shell (FEFS) has been studied experimentally using the batch adsorption method. The operating variables studied are pH, initial dye concentration contact time. Adsorption isotherm (Langmuir and Freundlich) and kinetics model were studied. The adsorption capacity of FEFS was found to increasing with increase in temperature, thermodynamics parameters such as ΔG, ΔH and ΔS for adsorption were evaluated. Adsorption of methylene blue on FEFS found to be endothermic process. The aim of present work is to study the effectiveness of the adsorbent to remove dyes from their aqueous solution and the removal of colour from textile and various industrial wastewater.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Kinetics, Aqueous Solution, Batch, Batch Adsorption, Capacity, Concentration, Dye, Dyes, Effectiveness, Effluents, Endothermic, Equation, Ferronia Elefuntum Fruit Shell, Freundlich, Industrial Wastewater, Isotherm, Kinetics, Kinetics Model, Langmuir, Methylene Blue, Model, Paper, pH, Pulp, Removal, Solution, Sorption, Temperature, Thermodynamics, Thermodynamics Adsorption Isotherm, Wastewater, Work

? Kumari, K. (2010), Synthesis of silica based sorbents and their uses in removal of Hg2+ ions from water. *Asian Journal of Chemistry*, **22** (9), 6765-6768.

Full Text: 2010\Asi J Che22, 6765.pdf

Abstract: The mercury sorption properties of commercial silica (CS), activated carbon (AC) and a cation exchange resin (CER) were investigated by the batch process. Thiolfunctionalized silica (TFS), functionalized hexagonal mesoporous silica (FHMC), silylated malonamide silica (SMS), dithiocarbamate anchored silica gel (DASG) were synthesized. The mercury removal from water was estimated over a wide range of initial Hg2+ concentration 1-20 mg/L, contact time 1-12 h, sorbent dose 1-10 g/L, pH 2-7 at temperature 25 degrees C and rpm 190. The sorption increased with increasing contact time but the equilibrium was attained in 6 h. The order of metal removing capacities for these chemical sorbents was SMS > CER > DASG > TFS > FHMS > AC > CS. The sorption followed Freundlich as well as Langmuir isotherms. The present paper shows the possibility of using functionalized silica in designing treatment plants for industrial effluents having low levels of heavy metals.

Keywords: Activated Carbon, Adsorption, Batch, Cadmium, Carbon, Cation Exchange, Contact Time, Cs, Equilibrium, Exchange, Freundlich, Heavy Metals, Hg2+, Industrial Effluents, Isotherms, Langmuir, Langmuir Isotherms, Mesoporous, pH, Plants, Removal, Resin, Silica, Sorbent, Sorbents, Sorption, Temperature, Treatment, Water

? Vadi, M., Maleki, A. and Poladiyan, F. (2010), Adsorption of some alkaline metals and alkaline earth metals on carbon nanotube. *Asian Journal of Chemistry*, **22** (9), 6906-6910.

Full Text: 2010\Asi J Che22, 6906.pdf

Abstract: In this work, the adsorption of some alkaline metals and alkaline earth metal nitrates on carbon nanotube have been measured. The results are significant for biologists, druggists and any one who investigate on alkaline metals and alkaline earth metals on carbon nanotube. This function is most important for Physicians to treat cancer or Osseo emptiness and by that we can loose water hardly and filtration. In this studies the alkaline nitrate and alkaline earth nitrate, mixed with carbon nanotube then after 5 min the amount of the compounds adsorbed on carbon nanotube was measured by atomic adsorption spectrometer method. Alkaline metals have more adsorption in comparison of alkaline earth metals on carbon nanotube.

Keywords: Adsorbents, Adsorption, Alkaline Earth Metals, Alkaline Metals, Atomic Adsorption, Bundles, Cancer, Carbon, Carbon Nanotube, Chemistry, Comparison, Compounds, Field-Emission, Fullerene, Functionalization, Hydrogen Storage, Metals, Nitrate, Nitrogen, Water

? Taskin, M. and Erdal, S. (2010), Isolation of a Reactive Black-5-decolourizing fungus, Absidia californica MT-1, from cement-contained soil and the optimization of culture conditions for dye removal. *Asian Journal of Chemistry*, **22** (9), 7123-7134.

Full Text: 2010\Asi J Che22, 7123.pdf

Abstract: The present study focused on the removal of textile dye Reactive Black-5 by actively growing mycelia of fungus Absidia californica MT-1,which was Isolated from the cement-contamined soil The temperature of 28 degrees C. shaking speed of 180 rpm, pH 5, inoculum amount of 0.2 g/L, 15 g/L sucrose and 1 g/L ammonium chloride were the most efficient conditions to achieve optimum removal of dye. Nutrient-poor medium was found to be more beneficial for dye removal. Biosorption/ bioadsorption was likely the dominant mechanism for dye removal by the fungus and found to be associated with mycelial morpholgy. The mycelial morphology in small uniform pelle) form was found to be better for dye removal. The maximum dye removal by A. californica MT-1 was 92 % (0.276 g/L bioadsorbed-dye) with 3 95 g/L of biomass production at an initial dye concentration of 0.3 g/L in 108 h. In the present study, both the ability of this fungus species to remove a textile dye and the usability of cement-contamined soil as a source of microorganisms, which are capable of removing snythetic textile dye, were investigated for the first time.

Keywords: Absidia Californica MT-1, Bacterium, Bioaccumulation, Bioadsorption, Biodegradation, Biological Decolorization, Biomass, Blue, Coriolus-Versicolor, Dye, Dye Removal, Microorganisms, Optimization, pH, Production, Reactive Black-5, Removal, Soil, Temperature, Textile Azo Dyes, Waste-Water, Wastewaters

? Yildirim, N., Yildiz, A. and Aydin, H. (2010), Agar-plate screening for acid dyes decolourization by three strains of *Pleurotus eryngii* isolated from Tunceli, Elazig and Hakkari Province of Turkey. *Asian Journal of Chemistry*, **22** (9), 7171-7177.

Full Text: 2010\Asi J Che22, 7171.pdf

Abstract: Many synthetic dyes present in industrial wastewaters are resistant to degradation by conventional treatments. In this study, the ability to decolourize two textile dyes by Pleurotus eryngii strains collected from geographically different habitats of Turkey was evaluated on agar plates For all strains, growth and decolourization halos were determined on malt extract agar plates containing 0 1 and 0.2 g/L of acid red 183 or acid green 25. Each P eryngii strain showed certain decolourization capacities and was able to decolourize both acid red 183 and acid green 25 on the malt extract agar plates, but not to the same extent Both dyes at all concentrations were found to be toxic for P eryngii growth The presence of the dyes in plates reduced the mycelial growth of all strains in comparison with the control culture growing in the medium without dyes. A positive correlation was found between the mycelial growth rate and the decolourization ability.

Keywords: Acid Green 25, Acid Red 183, Adsorption, Azo Dyes, Comparison, Control, Decolorization, Decolourization, Degradation, Dyes, Fungi, Growth, Growth Rate, Industrial Wastewaters, Oxidation, Phanerochaete-Chrysosporium, Pleurotus Eryngii, Removal, Turkey

? Zhai, Q.Z., Xu, Z.K. and Xue, Y. (2010), Encapsulation of lead sulphide in SBA-15 molecular sieve. *Asian Journal of Chemistry*, **22** (9), 7327-7335.

Full Text: 2010\Asi J Che22, 7327.pdf

Abstract: The nanosized channels of SBA-15 molecular sieve were used as template and nanosized lead sulfide was prepared inside them Pb2+ was firstly incorporated into the SBA-15 by ion-exchange method, then the nanosized PbS was prepared in the channels of the SBA-15 molecular sieve using thioacetamide as sulfur source. The (SBA-15)-PbS composite materials were characterized by chemical analysis, powder X-ray diffraction, Fourier transform infrared spectroscopy, low-temperature nitrogen adsorption-desorption technique at 77 K, solid state diffuse reflection absorption spectroscopy and luminescence studies. The PbS has been successfully incorporated in the channels of the SBA-15 molecular sieve and the framework of the SBA-15 in the prepared composite material was kept intact. The prepared host-guest composite material presents luminescence performance and the materials may be hopefully applied to the field of optical materials.

Keywords: Absorption, Analysis, Composite Material, Encapsulation, Fourier Transform Infrared, Infrared, Ion Exchange, Lead, Lead Sulfide, Nanocrystals, Nanoparticles, Nanowires, Nitrogen, Ordered Mesoporous Silica, Pb2+, Phase, Pores, SBA-15, SBA-15 Molecular Sieve, Stability, Template, X-Ray, X-Ray Diffraction

? Ma, Y.Q., Yu, H., Meng, R., Jin, X., Zhai, Q.Z. and Xu, J.B. (2010), Preparation, characterization of (SBA-15)-TiO2 nanocomposite material and its application to wiping off methylene blue in water body. *Asian Journal of Chemistry*, **22** (9), 7410-7422.

Full Text: 2010\Asi J Che22, 7410.pdf

Abstract: Titania (TiO2) was incorporated into SBA-15 by solid phase thermal diffusion method and the prepared nanocomposite material was characterized by powder X-ray diffraction, Fourier transform infrared spectroscopy, nitrogen adsorption-desorption analysis, transmission electron microscopy and scanning electron microscopy. The results showed that for the (SBA-15)-TiO2 the frameworks and ordered mesoporous structures of the SBA-15 molecular sieve were kept well. When the (SBA-15)-TiO2 was used to remove the methylene blue in water body, the removal effect was good.

Keywords: Adsorption, Analysis, Characterization, Diffusion, Fourier Transform Infrared, Infrared, Mesoporous, Methylene Blue, Nanocomposite, Nanoparticles, Nitrogen, Performance, Photocatalysis, Preparation, Removal, SBA-15, SBA-15 Molecular Sieve, Silica, TiO2, Titania, Titania, Water, X-Ray, X-Ray Diffraction

? Muneer, M., Bhatti, I.A. and Adeel, S. (2010), Removal of Zn, Pb and Cr in textile wastewater using rice husk as a biosorbent. *Asian Journal of Chemistry*, **22** (10), 7453-7459.

Full Text: 2010\Asi J Che22, 7453.pdf

Abstract: Biosorption technique has been employed for the treatment of textile processing industrial wastewater using rice husk as biosorbant for the metal binding. The samples were collected from textile-processing units located in the premises of Faisalabad city. The concentration of heavy metals Zn, Pb and Cr were examined using atomic absorption spectrometry. The concentration of these metals were detected in the range of 1.05-5.36, 0.50-2.2 and 0.45-8.33 (ppm), which were higher than the permissible limits recommended by environmental protection agency (EPA), Pakistan. The wastewater samples were treated using rice husk as biosorbant in a continuous flow system using glass column and adsorption capacity was calculated in order to study the adsorption of metals on the biomass. There was a remarkable decrease in the concentration of Zn,136 and Cr after adsorption, furthermore the other quality parameters such as pH, turbidity. electrical conductivity (EC), total hardness (TH), total dissolved solids (TDS), total suspended solids (TSS). chemical oxygen demand (COD) and dissolved oxygen (DO) were also investigated before and after adsorption. It was found that the concentrations of Zn, Pb and Cr were decreased up to 57,59 and 58%, respectively. The metal binding capacity of rice husk for the removal of heavy metals from the wastewater was as Zn < Cr < Pb.

Keywords: Absorption, Adsorbent, Adsorption, Adsorption Capacity, Aqueous-Solutions, Atomic Absorption Spectrometry, Binding Capacity and Biosorption, Biomass, Biosorbent, Biosorption, Capacity, Chemical Oxygen Demand, Chromium, COD, Effluents, Electrical Conductivity, EPA, Heavy Metals, Heavy-Metals, Industrial Wastewater, Lead, Marine-Algae, pH, Removal, Rice, Rice Husk, Sorption, System, Textile Industry, Total Dissolved Solids, Treatment, Wastewater

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Full Text: 2010\Asi J Che22, 7601.pdf

Abstract: In this investigation after field surveying, soil sampling were carried out from top soil of different erosional forms of marly lands including sheet, rill, gully and badlands (12 samples from 0-30 cm of each one) and from subsoil of gully and badlands (12 samples from the lowest depth of each one). These marly lands which located on the northern Iran have aridic moisture regime and thermic temperature regime. Comparing the average of chemical factors with different type of erosion by using Duncan test showed that amounts of EC (electrical conductivity), exchangeable and soluble sodium, SAR (sodium adsorption ratio) and ESP (exchangeable sodium per cent) had significant difference (p < 0.05) between all forms of erosion. While, CaCO3, gypsum, calcium, magnesium, potassium, HCO3-, SO42-, Cl- had no significant effect in form and type of erosion. Also, the comparison of mean for CEC (cation exchange capacity), pH and organic carbon revealed that sheet erosion as well as rill erosion had significant difference (p < 0.05) with other forms of erosion (gully and badland erosion).

Keywords: Adsorption, Behavior, Capacity, Carbon, Cation Exchange, Comparison, Electrical Conductivity, Exchange, Figures of Erosion, Iran, Marly Land, pH, Saturated Hydraulic Conductivity, Soil, Soil Chemical Properties, Spain, Stabilization, Temperature

? Senthil, M. and Arulanantham, A. (2010), Sorption of cadmium(II) from aqueous system by using bicarbonate impregnated sulphuric acid treated *Pongamia pinnata* seedpod carbon. *Asian Journal of Chemistry*, **22** (10), 7718-7732.

Full Text: 2010\Asi J Che22, 7718.pdf

Abstract: The adsorption of Cd(II) on modified bicarbonate impregnated sulphuric acid treated *Pongamia pinnata* activated carbon (BSPAC) prepared from its seedpods was investigated. The maximum adsorption was observed as a function of solution pH, contact time, carbon dosage and initial metal ion concentration. The adsorption capacity of adsorbent for cadmium was obtained by using Freundlich, Langmuir and Temkin isotherms. Kinetic studies were made with pseudo-first-order, pseudo-second-order and reversible-first-order kinetic equations. The results were compared with commercially available activated carbon (CAC) of 20-50 ASTM mesh size.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption Capacity, Agricultural Solid-Waste, Cadmium, Cadmium Removal, Cadmium(II), Capacity, Carbon, Cd(II), Concentration, Equilibrium, Freundlich, Function, Ions, Isotherm, Isotherms, Kinetic, Kinetic Equations, Kinetic Studies, Kinetics, Kinetics, Langmuir, Metal, Modified, pH, Pongamia Pinnata Seedpod Activated Carbon, Pseudo First Order, Pseudo Second Order, Pseudo-First-Order, Pseudo-Second-Order, Recovery, Removal, Size, Solution, Sorption, Sulphuric Acid, Temkin, Water

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Full Text: 2010\Asi J Che22, 7733.pdf

Abstract: In this study, fly ash from coal burning power plant was activated chemically, used as a low cost adsorbent for the removal of tartrazine dye. The activated fly ash was characterized by XRD. Results showed that activated fly ash due to increased amorphous property possesses more activity over surface to act as a suitable adsorbent for the removal of dye waste from industrial effluents. The adsorption kinetics is well represented by first order kinetic model.

Keywords: Activation, Adsorption, Adsorption Kinetics, Behavior, Color Removal, Cost, Dye, Dye, Fly Ash, Industrial Effluents, Kinetic, Kinetic Model, Kinetics, Low Cost Adsorbent, Mice, Model, Removal, Tartrazine, Toxicity, Waste-Water, XRD

? Asgher, M., Bhatti, H.N., Bhatti, I.A. and Sheikh, M.A. (2010), Response surface methodology and central composite design analysis of biosorption of reactive anthraquinone dyes by citrus sinensis waste biomass. *Asian Journal of Chemistry*, **22** (10), 7817-7826.

Full Text: 2010\Asi J Che22, 7817.pdf

Abstract: The objective of present research work is to optimize the physicochemical parameters influencing the biosorption of reactive anthraquinone dyes by Citrus sinensis biosorbent using central composite design under response surface methodological approach. The quadratic model explained the biosorption data with high regression coefficients, R-2 0.9882 for reactive blue 19 and 0.9999 for reactive blue 49. interactive effect of pH, biosorbent dose and dye concentration was found significant and sorption capacity was optimum at acidic pH range. smaller biosorbent dose and higher dye concentrations. The 2-factor interaction of pH, biosorbent dose and dye concentration significantly influenced the sorption potential of biosorbent.

Keywords: Adsorption, Aqueous-Solutions, Biomass, Biosorbent, Biosorption, Capacity, Carbon, Central Composite Design, Chromium(VI), Citrus Sinensis, Composite, Copper(II) Ions, Dye, Dyes, Immobilized Activated-Sludge, Model, Optimization, Packed-Bed, pH, Reactive Anthraquinone Dyes, Removal, Research, Response Surface Methodology, Sorption, Wastewaters

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Full Text: 2010\Asi J Che22, 7857.pdf

Abstract: The chemically activated carbon prepared from Syzygium jambolanum nut [CHSJC], an agricultural waste, after activation with,ammonium persulphate, an oxidizing chemical in the presence of sulphuric acid followed by thermal activation by modified dolomite process was successfully used to remove mercury(II) and chromium(VI) from wastewater in batch studies by adsorption process. Surface morphology of the carbon was analyzed by scanning electron microscope (SEM) before and after the adsorption of Hg(II) and Cr(VI) and the results revealed the presence of micropores which are responsible for adsorption. Fourier transform infrared (FT-IR) spectroscopic studies of the carbon showed that physiosorption took place on the surface of the carbon and the functional groups. responsible for adsorption. SEM and FT-IR analysis of high temperature activated Syzygium jambolanum nut carbon [HSJC] and a commercial activated carbon (CAC) before and after the adsorption of Hg(II) and Cr(VI) were also carried out for comparison purposes.

Keywords: (NH4)2S2O8, Activated Carbon, Adsorption, Agricultural Waste, Analysis, Aqueous-Solutions, Batch, Carbon, Chemical Activation, Chromium(VI), Comparison, Cr(VI), Fourier Transform Infrared, Fourier Transform Infrared Spectra, FT-IR, FTIR, Hazelnut, Hg(II), High Temperature, Infrared, Ion, Mercury(II), Micropores, Peanut Hull Carbon, Removal, Scanning Electron Microscope, SEM, Shell, Sulphuric Acid, Syzygium Jambolanum Nut, Temperature, Thermal Activation, Walnut, Wastewater

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Full Text: 2010\Asi J Che22, 7865.pdf

Abstract: In the front/back solid colour print of newsprint papers that have a porous, unstable structure, the colours deviate from one another. In the study, cyan and yellow colours of inks from the process print colours to newsprint paper and the colour variation that is constituted in the front/back solid colour print coinciding one after the other was examined by comparing the actual colour CIE L\*a\*b\* values to the NAA (Newspaper Association of America) Standard Gamut CIE L\*a\*b\* values. Keeping the newsprint paper stable, the application of front/back ground colour test print was performed by the ink in 5 diferent grammages. In order to acquire the L\*a\*b\* values of the ground colour process dyes that are close to standard values with the amount of ink changing, the amount of the optimum film ink to be applied to m(2) on the newsprint paper was also determined. In order to determine the penetration depth of the ink which can not be determined mathematically due to the unstable structure of the newsprint paper, the interface structure of paper-ink was evaluated by being monitored on Stereo Microscope and SEM.

Keywords: Coated Paper, Colour Variation, Determination, Dyes, Ink Components, Ink Paper Interactions, Newsprint, Penetration, Porous Paper, SEM, Sorption

? Ma, Y.Q., Yu, H., Li, X.D., Zhai, Q.Z. and Xu, J.B. (2010), Adsorption of cadmium and chromium in water body by SBA-15. *Asian Journal of Chemistry*, **22** (10), 8219-8230.

Full Text: 2010\Asi J Che22, 8219.pdf

Abstract: Nanoscale SBA-15 molecular sieve was synthesized by hydrothermal method and modified with ethylenediamine tetraacetic acid. The prepared materials were characterized by powder X-ray diffraction and scanning electron microscopy. The modified SBA-15 was used as sorbents to adsorb the heavy metal ions Cd2+ and Cr6+ in water body. The effects of pH, temperature and adsorption time on the efficiency of adsorption were studied and the optimum adsorptive conditions were confirmed. The results showed that the adsorptive effect of the material is the best and adsorptive ratio reaches 99.0% when the pH is 4, temperature is 35°C and adsorption time is 0.5 h.

Keywords: Adsorbent, Adsorption, Cadmium, Chromium, Composite, EDTA, Heavy Metal, Heavy Metal Ions, Mesoporous Silica SBA-15, Metal Ions, Nanowires, pH, Pores, SBA-15, SBA-15 Molecular Sieve, Temperature, Water, Water Body, X-Ray, X-Ray Diffraction

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Full Text: 2011\Asi J Che23, 219.pdf

Abstract: This paper focuses on the adsorption of acid red 18 onto low cost adsorbent prepared from Murraya koenigii seeds (MKS) from aqueous solutions at room temperature (25ºC). Batch experiments were conducted and the effect of different process parameters such as adsorbent dosage and initial dye concentration were studied. The adsorption isotherm data was analyzed using Langmuir, Freundlich and Temkin isotherm models. The equilibrium data fits well with Langmuir adsorption isotherm and the monolayer adsorption capacity was found to be 53.19 mg/g. The adsorption kinetics was studied using pseudo-first order and pseudo-second order models. The rate of adsorption was found to conform to pseudo-second order kinetics with a good correlation (R-2 > 0.99). The activated carbon prepared was characterized by SEM and FT-IR spectra. The results prove that Murraya koenigii seeds is a good low cost adsorbent for the removal of acid red 18 from aqueous solution.

Keywords: Activated Carbon, Adsorbent, Adsorbent Dosage, Adsorption, Adsorption Capacity, Adsorption Isotherm, Adsorption Kinetics, Agricultural Waste, Aqueous Solution, Aqueous Solutions, Basic Dye, Capacity, Carbon, Coir Pith, Concentration, Correlation, Cost, Data, Dye, Dye Removal, Dye Removal, Equilibrium, Experiments, Freundlich, FT-IR, FTIR, FTIR Spectra, Isotherm, Kinetics, Kinetics, Langmuir, Langmuir Adsorption Isotherm, Low Cost, Low Cost Adsorbent, Methylene-Blue Adsorption, Models, Monolayer, Pseudo First Order, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-First Order, Pseudo-First Order and Pseudo-Second Order, Pseudo-First-Order, Pseudo-Second Order, Pseudo-Second Order Kinetics, Pseudo-Second-Order, Removal, Room Temperature, SEM, Solid-Waste, Solution, Solutions, Technologies, Temkin Isotherm, Temperature, Thermodynamics, Water

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Full Text: 2011\Asi J Che23, 345.pdf

Abstract: The adsorption studies of roots, stem and leaves as adsorbents to remove flourescein dye from its aqueous solution has been carried out as a function of adsorbent dose, contact time, stirring speed, pH and temperature. Acidic pH (3-4), low temperature (10-30ºC) and low stirring speed (120-240 rpm) were found to be favourable conditions for the adsorption of flourescein dye on all the three adsorbents. The maximum adsorption 100 % at 1 h, 96.7 % at 4 h and 91 % at 2.5 h has been observed for roots, stem and leaves of Phoenix dactylifera, respectively. The adsorption equilibrium process has been described well by using Langmuir, Freundlich adsorption isotherms and pseudo-second order kinetics. Present studies showed that roots can be used as low cost adsorbent for the removal of flourescein dye from its aqueous solution as compared to roots and stem.

Keywords: Adsorbent, Adsorbent Dose, Adsorbents, Adsorption, Adsorption Equilibrium, Adsorption Isotherm, Adsorption Isotherms, Aqueous Solution, Aqueous-Solutions, Congo Red, Cost, Dye, Dyes, Equilibrium, Flourescein, Freundlich, Function, Isotherms, Kinetics, Langmuir, Langmuir and Freundlich Constants, Low Cost, Low Cost Adsorbent, Low Temperature, pH, Phoenix Dactylifera, Pseudo Second Order, Pseudo Second Order Kinetics, Pseudo-Second Order, Pseudo-Second Order Kinetics, Pseudo-Second-Order, Removal, Sawdust, Solution, Temperature, Waste-Water, Wood

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Full Text: 2011\Asi J Che23, 345.pdf

Abstract: Management of solid waste is the burgeoning issue of the current times. Agriculture waste is rich in organic material like cellulose, lignin etc. and can be of great use if utilized as right resource at right time and right place. In the current study agriculture waste material has been used for adsorption of colour from waste water. Sugarcane bagasse and paddy straw have been recycled to activated carbon and have been utilized and compared as the adsorbent for the removal of basic dye from aqueous solution. A basic dye, methylene blue has been used as the adsorbate. Two different mineral acids have been used for activation of raw material and it was observed that both H(3)PO(4) and HNO(3) were good activating agent but impregnation efficiency was in following order H(3)PO(4) > HNO(3). Adsorption experiments were conducted by varying several parameters namely pH, adsorbent dose, initial concentration of dye and contact time. It was observed that colour was effectively removed at all selected pH and the increase in activated carbon dose showed an increase in its adsorption efficiency. The percentage of colour removal decreased with an increase in the initial dye concentration. More than 90 % adsorption efficiency of dye from solution containing 10 mg/L of dye was attained with an adsorbent dosage of 0.1 g after 45 min of contact time at all pH. Results obtained indicate that agriculture waste material could be employed as a low cost alternative to commercial activated carbon in wastewater treatment for dye removal and can thus be a good example of wealth from waste.

Keywords: Activated Carbon, Activated Carbon, Adsorbent, Adsorption, Dye, Dye Removal, Kinetics, Management, Methylene Blue, Paddy Straw, pH, Sugarcane Bagasse, Treatment, Waste, Wastewater, Wastewater Treatment

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Full Text: [2011\Asi J Che23, 1889.pdf](2011/Asi%20J%20Che23,%201889.pdf); [2011\Asi J Che-Khan.pdf](2011/Asi%20J%20Che-Khan.pdf); [2011\Asi J Che-Khan-1.pdf](2011/Asi%20J%20Che-Khan-1.pdf)

Abstract: The aim of this review article is to bring out the toxicological effects caused by arsenic on the biological systems. Drinking water is the major direct source of arsenic exposure by general population. The two predominant species of arsenic are arsenate [As(V)] and arsenite [As(III)]. Arsenite is much more toxic. The review covers a bibliometric analysis of drinking water from 1991 to 2008 covering 2,299 publications on the subject. The data source and case study section highlights the historical and present evidences of arsenic toxicity. The effect of toxicity, biomarkers of arsenic toxicity and the mechanism of arsenic toxicity on plants and animals and sources of remediation; are well reported in the article. Lastly various treatment technologies to minimize or remove arsenic are reported.

Keywords: Activated Carbon, Analysis, Animals, Arsenate, Arsenic, Arsenite, Bibliometric, Bibliometric Analysis, Bibliometrie Analysis, Biological, Biomarkers, Case Study, Data, Drinking Water, Enhanced Adsorption, Exposure, General, Granular Ferric Hydroxide, In-Vitro, Induced Oxidative Stress, Induced Toxicity, Mechanism, Middle Ganga Plain, Monomethylarsonous Acid Mma(III), Plants, Population, Publications, Remediation, Review, Skin-Lesions, Source, Sources, Species, Systems, Technologies, Toxic, Toxicity, Treatment, Water, West-Bengal

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Full Text: 2011\Asi J Che23, 1049.pdf

Abstract: This study aimed to determine adsorption characteristics of Aspergillus oryzae beta-galactosidase onto a basic resin Duolite A568. The experimental data were analyzed by the Langmuir and Freundlich isotherm to describe the adsorption equilibrium. The equilibrium data fitted well with the Langmuir model which confirmed that the Duolite A568 was favourable for adsorption of P-galactosidase enzyme under conditions studied. The maximum adsorption capacity was found to be (5.1±0.49)×10-2 mg/g at 35ºC. The kinetic data were fitted. to pseudo-second-order kinetic model of Ho by linear and non-linear regression methods. The enthalpy change (Δ*H*º), the entropy change (Δ*S*º) and the Gibb’s free energy change (Δ*G*º) for the:sorption processes were calculated to be 15.5 kJ/mol, 30.4 J/mol K and -9.4 kJ/mol, respectively. The positive ΔHº value indicated that the adsorption process was endothermic. ΔGº and ΔSº values showed that adsorption process occurred by physical mechanism and spontaneously.

Keywords: Activated Carbon, Activation Energy, Adsorption, Adsorption Kinetic, Aqueous-Solution, Beta-Galactosidase, Duolite A568, Dynamic Approach, Equilibrium, Freundlich, Freundlich And Langmuir Isotherms, Freundlich Isotherm, Isotherm, Kinetic, Kinetic Model, Lactose Hydrolysis, Langmuir, Methylene-Blue, Nonlinear, Packed-Bed Columns, Patulin Adsorption, Polystyrene Composite-Particles, Resin, Stimulus-Response Technique, Ultra Sp-L

? Maleki, A., Mahvi, A.H., Zazouli, M.A., Izanloo, H. and Barati, A.H. (2011), Aqueous cadmium removal by adsorption on barley hull and barley hull ash. *Asian Journal of Chemistry*, **23** (3), 1373-1376.

Full Text: 2011\Asi J Che23, 1373.pdf

Abstract: Adsorbents prepared from barley hull and barley hull ash, an agricultural waste product, were used to remove cadmium from an aqueous solution in batch mode as a function of appropriate equilibrium time, amount of adsorbent, concentration of adsorbate, pH and particle size. Studies showed that pH of aqueous solutions affected cadmium removal as a result of removal efficiency increased with increasing solution pH. The maximum adsorption was about 95.8 and 99.2 % for barley hull and barley hull ash, respectively, at pH 9, contact time 180 min and initial concentration of 30 mg L-1 Desorption of cadmium was 8 % at pH 9. The cadmium sorption obeyed both the Langmuir and Fraundlich isotherms. The sorption kinetics are well described by the pseudo-second-order kinetic model. The studies showed barley hull ash was more favourable than barley hull in removing cadmium and thus was a better adsorbent as low-cost alternatives in wastewater treatment for cadmium removal.

Keywords: Adsorption, Barley Hull, Barley Hull Ash, Cadmium, Cd(II), Desorption, Dye Removal, Equilibrium, Heavy-Metal, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, pH, Removal, Rice Husk, Sorption, Straw, Waste, Waste-Water, Wastewater, Wastewater Treatment

? Saravanakumar, K. and Kumar, A. (2011), Removal of hexavalent chromium from aqueous solution using Vigna Radiata Husk (Green Gram). *Asian Journal of Chemistry*, **23** (6), 2635-2638.

Full Text: 2011\Asi J Che23, 2635.pdf

Abstract: In this study, Vigna radiate Husk (VRH) activated carbon was prepared and used to remove Cr(VI) from aqueous solution. The influences of initial Cr(VI) ion concentration (250-1000 mg/L), pH (1-11), adsorbent dose (0.25-2.5 g), contact time (15-150 min) and particle size (0.15-0.85 mm) had been reported. A comparison of isotherm models applied to the adsorption of Cr(VI) ions on the adsorbent was evaluated for Langmuir, Freundlich and Redlich Peterson isotherms. Adsorption of Cr(VI) was highly pH dependent and the results indicate that the optimum pH for the removal was found to be 2. The obtained results showed that the adsorption of Cr(VI) by Vigna radiate Husk follows Redlich-Peterson isotherm equation with a correlation coefficient equal to 0.99. In addition, the kinetics of the adsorption process follows the pseudo second-order kinetic model. The results indicate that Vigna radiate Husk can be employed as a low cost alternative to commercial adsorbents in the removal of Cr(VI) from water and wastewater.

Keywords: Activated Carbon, Adsorbent, Adsorption, Adsorption, Aqueous Solution, Biosorption, Cadmium(II), Chromium, Cr(VI), Equilibrium, Freundlich, Heavy Metal Removal, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetics, Langmuir, Metal-Ions, pH, Removal, Vigna Radiata Husk, Waste-Water, Wastewater, Wastewaters, Water

? Dikmen, S. and Yorukogullari, E. (2011), Nitrate removal from aqueous solution by hexadecyltrimethylammonium bromide-modified clinoptilolite. *Asian Journal of Chemistry*, **23** (6), 2653-2660.

Full Text: 2011\Asi J Che23, 2653.pdf

Abstract: In the first stage of study, detailed characterization studies were performed on clinoptilolite-rich tuff mined from the Gordes/Manisa region (Turkey). The physical and chemical properties were determined using instrumental analysis techniques, including XRD, XRF, SEM, DTG-DTA and specific surface area. In the second stage, modification of clinoptilolite-rich tuff surface with hexadecyltrimethylammonium bromide (HDTMA) to improve the adsorption efficiency of nitrate was performed using a batch equilibration method. The surface modification of clinoptilolite with a surfactant was examined using the FT-IR spectroscopic technique and equilibrium data. The Langmuir and Freundlich adsorption models were applied to describe the equilibrium isotherms and the isotherm constants were also determined. The equilibrium data are fitted to the Freundlich adsorption isotherm. The kinetic models were used to describe the kinetic data and the rate constants were evaluated. The experimental data fitted well the pseudo-second-order kinetic model and also followed the intraparticle diffusion model up to 1 h.

Keywords: Adsorption, Adsorption, Adsorption Isotherm, Aqueous Solution, Cationic Surfactant, Characterization, Chromate, Clinoptilolite, Diffusion, Equilibrium, Equilibrium Isotherms, Freundlich, FT-IR, FTIR, Isotherm, Isotherms, Kinetic, Kinetic Model, Kinetic Models, Langmuir, Modified Sepiolite, Natural Clinoptilolite, Nitrate, Organo-Zeolite, Removal, SEM, Sorption, Surfactant, Surfactant-Modified Zeolite, Turkey, Water

? Samil, A., Acemioglu, B., Gultekin, G. and Alma, M.H. (2011), Removal of remazol orange RGB from aqueous solution by peanut shell. *Asian Journal of Chemistry*, **23** (7), 3224-3230.

Full Text: 2011\Asi J Che23, 3224.pdf

Abstract: In this study, peanut shell was utilized as an adsorbent for the removal of remazol orange RGB from aqueous solution by adsorption technique. Adsorption experiments were conducted as a function of contact time, initial dye concentration, temperature and pH. While the amount of the dye removed by peanut shell was increasing with increasing contact time, initial dye concentration, solution temperature, it decreased with increasing solution pH. The maximum dye removal were between 82.14 and 97.42% under all the experimental conditions studied such as concentration, pH and temperature. Adsorption kinetic was in agreement with the pseudo-second order model. Column adsorption studies were also performed and the percentage of dye adsorbed in column was between 98 and 100% for all studied concentrations.

Keywords: Adsorbent, Adsorption, Adsorption Kinetic, Aqueous Solution, Batch, Column, Column Adsorption, Dye, Dye, Dye Removal, FTIR, Kinetic, Kinetic-Models, Kinetics, Methylene-Blue, Peanut Shell, Peat, Perlite, pH, Red, Remazol Orange RGB, Removal, SEM, Sorption, Temperature, Violet

? Hanif, M.A., Bhatti, H.N., Bhatti, I.A. and Asghar, M. (2011), Biosorption of Cr(III) and Cr(VI) by newly isolated white rot fungi: Batch and column studies. *Asian Journal of Chemistry*, **23** (8), 3375-3383.

Full Text: 2011\Asi J Che23, 3375.pdf

Abstract: The present study was planned to evaluate the heavy metals uptake potential of newly isolated white rot fungi from metals contaminated sites. Three white rot fungi viz., Pleutrotus sajor-cajor, Ganoderma lucidum and Agaricus bitorquis were selected for biosorption of Cr(III) and Cr(VI) studies. The optimum pH for maximum uptake of Cr(III) and Cr(VI) by native/immobilized Pleurotus sajor-caju, Agaricus bitorquis and Ganoderma lucidum was found to be 5 and 2, respectively. Increase in biomass concentration in a fixed volume of solution (100 mL) at constant pH 5, initial metal concentration (100 mg/L) and temperature (30ºC) reduced the metal sorption capacity of biomass. Biosorption of both metal ions increased with concentration from 25 to 200 mg/L. Langmuir adsorption isotherm model and pseudo second order kinetic model fitted well to metal biosorption data. Equilibrium for metal uptake was reached within 2 h of contact. Metal uptake process was found dependent on temperature. The pseudo second order kinetic model fitted well to experimental data of column study as it had higher value of correlation coefficient (R2). Sulphuric acid was found as the best eluent for metal recovery from dead fungal biomass.

Keywords: Adsorption, Adsorption Isotherm, Aqueous-Solutions, Batch, Biosorption, Chemical-Modification, Chromium, Column, Column Studies, Cr(III), Cr(VI), Desorption Characteristics, Equilibrium, Golden Shower Biomass, Heavy Metals, Heavy-Metals, Immobilization, Isotherm, Kinetic, Kinetic Model, Langmuir, Langmuir Adsorption Isotherm, Ni(II) Biosorption, pH, Recovery, Removal, Reticulata Waste Biomass, *Sargassum* sp, Seaweed Biosorbent, Sorption, Temperature, Uptake, White Rot Fungi

? Malakootian, M., Fatehizadeh, A. and Yousefi, N. (2011), Evaluating the effectiveness of modified pumice in fluoride removal from water. *Asian Journal of Chemistry*, **23** (8), 3691-3694.

Full Text: 2011\Asi J Che23, 3691.pdf

Abstract: An excess amount of fluoride ions in drinking water has been known to cause adverse effects on human health. The fluoride removal from synthetic water by modified pumice was studied at batch experiments. The chemical activation process was achieved chemically with FeCl3, Al2(SO4)3 and HDTMA-Br. The effect of pH, contact time, fluoride concentration and adsorbent dose on fluoride sequestration was investigated. The results showed that 0.3M HDTMA-Br had best function for pumice modification in fluoride removal. Kinetic data showed that fluoride adsorption was rapid in the beginning and maximum uptake occurred in 0.5 h and equilibrium reached within 3 h. The maximum fluoride adsorption was obtained at pH = 7. Also, with increasing fluoride initial concentration and decreasing pumice dose, the fluoride removal efficiency decreased. The obtained results in this study were matched with Freundlich isotherm and pseudo second order kinetic. The maximum adsorption capacity (*q*m) and rate constant were found 0.29 (mg/g) and 0.13 (mg/g min), respectively.

Keywords: Adsorbent, Adsorption, Adsorption Capacity, Adsorption Model, Aqueous-Solution, Carbon, Drinking Water, Drinking-Water, Earth, Equilibrium, Fluoride, Fluorosis, Freundlich, Freundlich Isotherm, Isotherm, Kinetic, Kinetic Model, Kinetics, Media, Modified, Modified Pumice, pH, Pumice, Removal, Uptake, Waste-Water, Water

? Buvaneswari, N. and Kannan, C. (2011), Identification of water polluting organic dyes by tomato plant root and silica through adsorption mechanism from aqueous solution. *Asian Journal of Chemistry*, **23** (8), 3721-3728.

Full Text: 2011\Asi J Che23, 3721.pdf

Abstract: The organic dyes directly pollute the soil, water, plants and all living systems in the environment. In which, water polluting dyes are identified through adsorption mechanism by using anionic dyes such as indigo carmine and congo red. For this study, tomato plant root powder and silica are chosen as adsorbents. The adsorption parameters are optimized for maximum adsorption. The positive AS values for adsorption of anionic dyes indicate that the high disorder at adsorption interface. The ΔGº values are not much increased with increase of temperature indicates the adsorption is almost over at room temperature. The adsorptions of both dyes are followed Freundlich and Langmuir isotherms and pseudo second order kinetics. The negative values of ΔHº less than 40 kJ/mol indicated that the adsorption is physisorption. The high recovery of anionic dyes from tomato plant root and silica is a supportive evidence for the water polluting nature of anionic dyes.

Keywords: Activated Carbon, Adsorption, Aqueous Solution, Biodegradation, Biosorbent, Congo Red, Decolorization, Degradation, Dyes, Freundlich, Freundlich And Langmuir Isotherms, Indigo Carmine Dye, Isotherms, Kinetics, Langmuir, Langmuir Isotherms, Mechanism, Organic Dyes, Physisorption, Plants, Recovery, Removal, Separation, Silica, Soil, Temperature, Tomato, Tomato Plant Root, Waste-Water, Water, Water Polluting

? Suresh, S., Sugumar, R.W. and Maiyalagan, T. (2011), Equilibrium and kinetic studies on the adsorption of methylene blue from aqueous solution onto activated carbon prepared from *Murraya koenigii* (curry tree) stems. *Asian Journal of Chemistry*, **23** (10), 4486-4490.

Full Text: 2011\Asi J Che23, 4486.pdf

Abstract: In the present study, activated carbon is prepared from Murraya koenigii Stems (MKST) and used for the adsorption of methylene blue from aqueous solution. The nitrogen adsorption isotherms were used to characterize the pore properties of the activated carbon including the BET surface area, pore volume and pore diameter. The specific surface area of the prepared carbon is 508 m2/g. Batch mode experiments were conducted to study the effect of adsorbent dosage on the adsorption of methylene blue. The equilibrium data fits well with Langmuir model with monolayer adsorption capacity of 123.46 mg/g. The adsorption kinetics was studied using pseudo-first order and pseudo-second order models. The rate of adsorption was found to conform to pseudo-second order kinetics with a good correlation. The results show that methylene blue interacts strongly with the prepared activated carbon and hence the adsorbent is good for the removal of methylene blue from aqueous solution.

Keywords: Activated Carbon, Adsorbents, Adsorption, Adsorption Isotherm, BET, Carbon, Coir Pith, Color, Dye Removal, Effluents, Equilibrium, Kinetic, Kinetics, Langmuir, Methylene Blue, Sawdust, Shells, Sorption, Thermodynamics, Waste-Water

? Ghane, E.R., Momenheravi, M., Borjali, S., Ardalan, T. and Ardalan, P. (2011), Biosorption of methyl orange from aqueous solutions by silk maize as an eco-friendly biosorbent. *Asian Journal of Chemistry*, **23** (11), 4777-4782.

Full Text: 2011\Asi J Che23, 4777.pdf

Abstract: In this study, silk maize activated carbon developed from maize waste material was tested as biosorbent for the removal of methyl orange dye from aqueous solutions. Adsorption of methyl orange onto this low-cost natural adsorbent was studied by batch adsorption at different temperature. The effects of contact time, adsorption dose and initial dye concentration on adsorption capacity were studied. The kinetic of the sorption was analyzed using the pseudo-first-order, pseudo-second-order and Elovich kinetic models. The data showed that the second-order equation was the more appropriate. The equilibrium sorption isotherms have been analyzed by the Langmuir, Freundlich, Tempkin and Harkins-Jura (H-J) models. The Langmuir isotherm has the highest correlation coefficient (R2>0.99). The apparent thermodynamic parameters were calculated and the obtained values support the conclusion that the reactive dye molecules sorbs by exothermic process.

Keywords: Activated Carbon, Adsorption, Anionic Dyes, Biosorbent, Biosorption, Cellulose, Congo Red, Equilibrium, Equilibrium, Isotherm, Langmuir, Methyl Orange, Reactive Dye, Removal, Silk Maize, Sorption, Waste-Water

? Asman, S., Yusof, N.A., Abdullah, A.H. and Haron, M.J. (2011), Synthesis and characterization of a molecularly imprinted polymer for methylene blue. *Asian Journal of Chemistry*, **23** (11), 4786-4794.

Full Text: 2011\Asi J Che23, 4786.pdf

Abstract: This study reports the preparation of a molecularly imprinted polymer for the removal of methylene blue dye from aqueous media. The methylene blue-molecularly imprinted polymer was prepared using bulk polymerization via radical polymerization containing methylene blue as a template, methacrylic acid, as a monomer, ethylene glycol dimethacrylate as a cross-linker, benzoyl peroxide as an initiator and I. tetrahydrofuran as a solvent (porogen) in ratios of 0.117 mmol, 0.930 mmol, 4.650 mmol, 10.000 mg and 30.000 mL, respectively. The polymer block obtained was ground and sieved using a 90 pm sieve and the methylene blue template was removed from the methylene blue-molecularly imprinted polymer by extracting it with methanol/acetic acid/water (8:1:1) mixture. The non-molecularly imprinted polymer was synthesized as a reference. The methylene blue-molecularly imprinted polymer was characterized by using Fourier-transform infrared spectroscopy, scanning electron microscopy, a particle size analyzer and BET equation. The effect of different parameters such as pH, time and concentration of methylene blue, selectivity and reusability of the methylene blue-molecularly imprinted polymer were evaluated. Maximum sorption of methylene blue occurred at pH 5 in 30 s. The sorption followed a pseudo-second-order kinetic model. The adsorption isotherm of methylene blue followed the Freundlich isotherm model. The selectivity study had proved that the methylene blue-molecularly imprinted polymer was highly selective to the methylene blue analyte.

Keywords: Adsorption, Adsorption-Isotherm, BET, Biosorption, Bulk Polymerization, Equilibrium, Human Urine, Isotherm, Malachite Green, Methylene Blue, Molecularly Imprinted Polymer, Particles, pH, Precipitation Polymerization, Removal, Reusability, Selectivity, Solid-Phase Extraction, Water

? Abbasian, S., Sohi, A.H. and Katal, R. (2011), Effect of different parameters on the adsorption of Zn(II) onto charcoal ash. *Asian Journal of Chemistry*, **23** (11), 4893-4899.

Full Text: 2011\Asi J Che23, 4893.pdf

Abstract: The aim of this research work is to investigate sorption characteristic of charcoal ash for the removal of Zn(II) from aqueous solutions and wastewater. The sorption of Zn(II) by batch dynamic method is carried out. The optimum conditions of sorption were found to be: a sorbent dose of 10 g in 100 mL of aqueous solutions, contact time of 2 h, pH 5. In optimum condition, removal efficiency was 96.1 for the Zn(II). Three equations, i.e. Morris-Weber, Lagergren and pseudo second order have been tested to track the kinetics of removal process. The Langmuir, Freundlich and D-R are subjected to sorption data to estimate sorption capacity. It can be concluded that ash has potential to remove Zn(II) ions from aqueous solutions at different concentrations. Desorption efficiency had been tested by water saturated with CO2 and by aqueous solution of acetic acid, the results was not considerable. It was found that increasing temperature has positive effect on the adsorption, the thermodynamic parameters ΔH, ΔS and ΔG are evaluated. Thermodynamic parameters showed that the adsorption of Zn(II) onto ash was feasible, spontaneous and endothermic under studied conditions.

Keywords: Adsorption, Aqueous-Solution, Ash, Bagasse Fly-Ash, Desorption, Dyes, Fluoride, Isotherm, Kinetic, Kinetics, Langmuir, Metal-Ions, pH, Removal, Removal, River Sand, Sorption, Thermodynamic, Thermodynamic Parameters, Waste-Water, Zinc

? Zhu, R.H. and Chen, L.H. (2011), Spectrofluorimetric determination of arsenic(III) in water samples. *Asian Journal of Chemistry*, **23** (12), 5271-5274.

Full Text: 2011\Asi J Che23, 5271.pdf

Abstract: A novel analytical method for determination of trace arsenic(Ill) is established by kinetic spectrofluorimetric. The method is based on quenching of the fluorescence, Rhodamine B, by the action of iodine, which is released by the reaction between arsenic(111) and potassium iodate in acidic medium. Under the optimized conditions, the detection limit was 0.5 mu g L(-1), the relative standard deviation was 3.2 % for arsenic(Ill) (c = 40 mu g L(-1), n = 6). The recovery of real arsenic(III) samples were in the range of 95.6-104.1 %. This method has been applied for the trace of arsenic(III) detection in real water samples. The results indicated that there was a good linearity between the fluorescence intensity of Rhodamine B and the concentration of arsenic(III).

Keywords: Kinetic Spectrofluorimetric, Arsenic(III), Rhodamine B, Potassium Iodate, Atomic Fluorescence Spectrometry, Plasma-Mass Spectrometry, Spectrophotometric Determination, Speciation, Extraction, Generation

? Manzoor, A., Kanwal, F., Imran, M. and Yunis, R. (2011), Adsorption of Eosin Bluish on Roots, Stem and Leaves of Phoenix dactylifera. *Asian Journal of Chemistry*, **23** (12), 5452-5456.

Full Text: 2011\Asi J Che23, 5452.pdf

Abstract: Phoenix dactyl (fern (Date Palm) was investigated for its ability to perform as a suitable adsorbent for removal of Eosine bluish from aqueous solution. The effect of adsorbent dose, contact time, stirring speed, pH and temperature was investigated using a batch adsorption technique. The results revealed the potential of roots, stem and leaves of Phoenix dacrylifera (Date Palm) fiber, as a low cost sorbent for Eosine dye examined. Acidic pH (1), low temperature (10°C) and low stirring speed (240 rpm) were found to be favourable conditions for the adsorption of eosin dye on all the three adsorbents. Langmuir and Freundlich isotherm equations were applied for the equilibrium data. The comparative study showed that leaves were found to be best adsorbent for removing eosin dye from aqueous solution as compared to roots and stem of Phoenix dactylifera.

Keywords: Adsorption, Adsorption Isotherm, Aqueous-Solutions, Chitin, Dyes, Eosin Bluish, Freundlich Constants, Isotherm, Langmuir, Langmuir Constants, pH, Phoenix Dactylifera (Date Palm), Pseudo-Second Order Kinetics, Removal, Sawdust, Waste-Water, Wood

# Title: Asian Journal of Communication

Full Journal Title: Asian Journal of Communication

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? So, C.Y.K. (2010), The rise of Asian communication research: A citation study of SSCI journals. *Asian Journal of Communication*, **20** (2), 230-247.

Abstract: This study addresses two research questions: whether interest in Asian communication has been growing over the past 20 years, and whether there is an increasing level of participation and growing contributions among Asian scholars in the field of communication. Using 23 communication journals in the SSCI database, we identify Asia-related journal article titles and count the number of authors of Asian origins. We find that both are clearly on the rise, especially in the fields of new media and public relations. China, Japan, and South Korea have the largest share of title references, followed by Israel, Taiwan, India, and Hong Kong.

Keywords: Asian Communication Research, Bibliometric Analysis, China, Citation, Citation Analysis, Communication, Communication Journals, Communication Study, Database, Hong Kong, India, Israel, Journal, Journals, Korea, Media, Research, SSCI

# Title: Asian Journal on Energy and Environment

Full Journal Title: [Asian Journal on Energy and Environment](http://www.asian-energy-journal.info/view3.asp)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

?? Chantawong, V., Harvey, N. and Bashkin, V.N. (2001), Adsorption of lead nitrate on Thai kaolin and ballclay. *Asian Journal on Energy and Environment*, **1**, 33-??.

Full Text: 2001\Asi J Ene Env1, 33.pdf

# Title: Asian Journal of Social Psychology

Full Journal Title: [Asian Journal of Social Psychology](http://www.ingentaconnect.com/content/bpl/ajsp;jsessionid=3kd6pjafbbuao.alice)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1367-2223

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Haslam, N. and Kashima, Y. (2010), The rise and rise of social psychology in Asia: A bibliometric analysis. *Asian Journal of Social Psychology*, **13** (3), 202-207.

Full Text: [2010\Asi J Soc Psy13, 202.pdf](2010/Asi%20J%20Soc%20Psy13,%20202.pdf)

Abstract: The growth of social psychology in Asia from 1970 to 2008 was examined through a bibliometric analysis of articles in the ISI Web of Science database that listed Asian-based authors. The 1866 articles have appeared at an accelerating rate, and represent a rapidly-growing share of global publications in the field. Publication trajectories of different Asian nations show the Indian first wave, Hong Kong and Japan’s second wave, and China and Taiwan’s third wave of growth. Trends in the rates of Asian first authorship, single-nation authorship, and cross-cultural research suggest that Asian social psychology is increasingly more autonomous and distinctive.

Keywords: Bibliometric, Bibliometric Analysis, ISI, Publication Trends, Social Psychology

# Title: Asian Journal of Surgery

Full Journal Title: Asian Journal of Surgery

ISO Abbreviated Title:

JCR Abbreviated Title: Asian J Surg

ISSN: 1015-9584

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Mahawar, K.K., Malviya, A. and Kumar, G. (2006), Who publishes in leading general surgical journals? The divide between the developed and developing worlds. *Asian Journal of Surgery*, **29** (3), 140-144.

Abstract: BACKGROUND: Most articles in top general surgical journals seem to originate from a limited few developed countries. The purpose of this study was to establish which countries publish the most in leading general surgical journals. METHODS: We analysed all the studies, reviews and case reports published in 2003-2004 in 10 leading English-language general surgical journals with the highest impact factors to obtain country-wise data with regard to the origin of articles. Editorials, historical articles, commentaries, guidelines, biographies, interviews and letters to editors were excluded from the analysis. RESULTS: A total of 5,081 articles were reviewed. Out of these, 834 were excluded as detailed above and the remaining 4,247 articles were analysed. Most of these were from USA, European countries, Japan, and Australia. It seems that the vast majority of the world’s population living in the developing countries do not find adequate representation in leading general surgical journals. CONCLUSION: Very few articles are published from developing countries in leading general surgical journals. Both developing countries and medical journals need to take steps to curb this trend. Steps are suggested to improve the situation so that the developing world is also adequately represented in the surgical literature.

Keywords: Analysis, Australia, Background, Case Reports, Data, Developing, Developing Countries, Developing World, General, Guidelines, Impact, Impact Factors, Interviews, Japan, Journals, Literature, Living, Medical, Medical Journals, Methods, Origin, Population, Purpose, Representation, Reviews, Trend, USA, World

# Title: Asian Libraries

Full Journal Title: Asian Libraries

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Wormell, I. (1998), Informetrics: An emerging subdiscipline in information science. *Asian Libraries*, **7** (10), 257-268.

Full Text: [1998\Asi Lib7, 257.pdf](1998/Asi%20Lib7,%20257.pdf)

Abstract: The Centre for Informetric Studies (CIS) was launched in 1996 by the Royal School of Library and Information Science in Copenhagen. The head of centre presents the CIS, giving a sample of activities and research programmes. The emerging field of informetrics is described in a historical perspective as a subfield of bibliometrics. The new approach combines advanced information retrieval theories and methodologies with the scientific study of information flows. CIS aims to apply improved bibliometric methods not only to scientometrics studies and research evaluations of science and technology, but also to the analysis of their mutual societal, industrial and other special relations. This means an extension of traditional bibliometric analyses to cover non-scholarly communities in which information is produced, communicated and used. It is also an appeal to modern LIS professionals to face the challenge of this new area of quantitative studies, and to explore the databases not only as a registry but also as a tool for analytical work. The possibilities for LIS professionals to raise their positions in information work hierarchies are emphasised, as well as the exploration of informetric techniques to support “informed” management decisions and policy making.

Keywords: Decision Making, Information Engineering, Information Retrieval, Methodology, Quantitative Techniques

Anwar, M.A. and Saeed, H. (1999), Pakistani librarians as authors: A bibliometric study of citations in LISA-PLUS. *Asian Libraries*, **8** (2), 39-46.

Full Text: [1999\Asi Lib8, 39.pdf](1999/Asi%20Lib8,%2039.pdf)

Abstract: This study presents quantitative analysis of 251 items contributed by 64 Pakistani LIS professionals culled from LISA-PLUS. Volume of contribution, sources where published, periodic distribution, type of publications and topical coverage are dealt with in the analysis. Journal literature which represents 90.4 per cent of the citations is published in 43 periodicals, most of which are from the United States. However, more than half of the journal literature comes from one national journal. A wide range of topics is covered, but critical areas such as information needs, user education and collection evaluation receive very little attention.

Keywords: Collection Management, Education, Information Services, Library Services, Library Users, Quantitative Analysis

# Title: Asian-Pacific Economic Literature

Full Journal Title: [Asian-Pacific Economic Literature](http://www.blackwellpublishing.com/journal.asp?ref=0818-9935&site=1), [Asian-Pacific Economic Literature](http://weblinks1.epnet.com/HJAFdetail.asp?tb=1&_ug=dbs+0+ln+en%2Dus+sid+56B2EE21%2D74E5%2D4393%2DA524%2D509C497F9F2E%40Sessionmgr2+AD79&_uh=btn+N+idb+buhish+jdb+buhjnh+op+phrase+ss+ID++%22bm6%22+BF12&_us=db+0+sm+KS+95B1&)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0818-9935

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Davis, J.C. and Gonzalez, J.G. (2003), Scholarly journal articles about the Asian Tiger Economies: Authors, journals and research fields, 1986-2001. *Asian-Pacific Economic Literature*, **17** (2), 51-61.

Full Text: [2003\Asi-Pac Eco Lit17, 51.pdf](2003/Asi-Pac%20Eco%20Lit17,%2051.pdf)

Abstract: Focuses on the scholarly journal articles about the tiger economies in Asia. Response of economics literature to change in economies; Database of the “Journal of Economic Literature” used as data source of the study; Trends and cycles of publications.

# Title: Asian Pacific Journal of Cancer Prevention

Full Journal Title: Asian Pacific Journal of Cancer Prevention

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Moore, M.A., Yoo, K.Y. and Tuncer, M. (2009), What is the future for the *Asian Pacific Journal of Cancer Prevention* (and control) and the Asian Pacific Organization for Cancer Prevention (and control)? *Asian Pacific Journal of Cancer Prevention*, **10** (1), 1-2.

Abstract: The Asian Pacific Organization for Cancer Prevention was launched approximately 10 years ago with publication of a booklet entitled ‘Introduction to Cancer Prevention in Tables and Figures’. This was followed by regular quarterly publication of the APJCP starting in the year 2000 - a new project for a new millenium - and a number of research meetings held across Asia. The journal is now in its 10th year, indexed on PubMed and Science Citation Index (Expanded) and relatively well known (not least for its yellow cover). However, its future after its tenth birthday remains uncertain, as there is no infrastructure in place to ensure continuation after retirement of the present Chief/Managing Editor. The question of what might be the best way forward is the focus for the present ‘Editorial Comment’. For financial as well as ecological reasons the APJCP is now an electronic journal, printing and postage for issues of almost 200 pages being beyond the resources available. While the costs are therefore relatively low and primarily limited to staff salaries, they do need to be covered and it cannot be simply assumed that the present support provided by the UICC Japanese National Committee will continue long-term. Therefore comments and suggestions are invited from all interested individuals and institutions as to how the APJCP, and by extension the APOCP, should be organized and financed. All communications received will be given space in the next few issues of the APJCP so that discussion can be fostered and informed decisions made at the 5th APOCP General Assembly Conference in Istanbul, April 2010.

Keywords: Citation, Research

# Title: Asian-Pacific Journal of Public Health

(Asia Pac. J. Public Health)

Full Journal Title: [Asian-Pacific Journal of Public Health](http://www.scopus.com/scopus/source/sourceInfo.url?sourceId=19598)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0818-9935

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Miller, F.D. and Michael, J.M. (1989), Environmental health education in Micronesia. *Asian-Pacific Journal of Public Health*, **3** (1), 51-60.

Abstract: Water supply and sanitation programmes in Micronesia require substantial capital investments. In the past, many of these projects have failed to achieve their maximum impact on preventing water-related diseases. Cases of cholera and the continuation of frequently occurring gastro-intestinal diseases undermine the expectations that new and planned water and sanitation systems will result in disease prevention. This report indicates that knowledge of water-related diseases and the understanding of the benefits of safe water supply and sanitation are limited as programmes in Micronesia that would educate the different sectors of the community have never been institutionalised. We have developed the first comprehensive system for teaching about water supply, sanitation and health in a Micronesian environment. The educational materials will be used as curricula in public education and as information resources for appropriate individuals in these remote and scattered communities of the Pacific.

? Kompayak, U. and Dejthai, T. (1990), Treatment efficiency and filtration rate of a horizontal sand filtration system. *Asian Pacific Journal of Public Health*, **4** (4), 234-241.

Abstract: The purpose of this study was to establish acceptable criteria for a horizontal sand filtration (HSF) system that are suitable for the design of community water supply units in rural areas. Two laboratory scales of HSF were constructed and tested for their filtration rates and treatment efficiency in Visetchaicharn District of Angthong Province, Thailand. The main structure of both models was the same except for the lengths of the filtration column, i.e., 80 cm. in Model 1 and 100 cm. in Model 2. The results of treatment efficiency of both models were very satisfactory. The physical and chemical quality of the filtered water was within the standards for drinking water except for bacteria quality. The rates of filtration of Model 1 were slightly faster than those of Model 2 for both one and two meters of water level in the raw water column. The rates for both models were higher than the lower limit standards of the slow sand filtration system throughout the study.

? Omenn, G.S. (1992), Environmental biotechnology: Biotechnology solutions for a global environmental problem, hazardous chemical wastes. *Asian Pacific Journal of Public Health*, **6** (2), 40-45.

Abstract: Biotechnology has a growing place in the remediation of hazardous waste sites throughout the world, and especially in Asia where population density is high and land and fresh water are scarce. In-situ bioremediation has been demonstrated already to be highly effective for petroleum hydrocarbons (alkanes, aromatics, polychlorophenols) and organophosphate pesticides in soils and for gasoline by-products (benzene, toluene, xylene) and chlorinated solvents (trichloroethylene) in groundwater. Heavy metals and PCBs are not suitable for bioremediation. Environmental biotechnology includes solid-phase and slurry-phase bioremediation for contaminated soils and site-specific bioreactors for contaminated groundwater. Specific examples are presented. From a policy point of view, accumulated wastes must be detoxified, preferably at sites where they already exist. We cannot continue to rely on their removal and disposal “elsewhere”. For current waste streams, we must minimize the volumes and toxicity. Environmental biotechnology will play a key role.

? Chiu, W.T., Lin, P.W., Chiou, H.Y., Lee, W.S., Lee, C.N., Yang, Y.Y., Lee, H.M., Hsieh, M.S., Hu, C.J., Ho, Y.S., Deng, W.P. and Hsu, C.Y. (2005), Infrared thermography to mass-screen suspected sars patients with fever. *Asian-Pacific Journal of Public Health*, **17** (1), 26-28.

Abstract: Fever greater than 38°C is a cardinal sign of patients with the severe acute respiratory syndromes (SARS). To reduce the risk of nosocomial cross infections, screening all patients and visitors who visit hospitals and clinics for fever at the entrance of every hospital building has become a standard protocol in Taiwan during the SARS epidemic from mid-April to mid-June 2003. We used a digital infrared thermal imaging (DITI) system (Telesis Spectrum 9000 MB) to conduct mass screening of patients and visitors who entered the hospital to identify those with fever. The DITI system has two components: a sensor head and a PC imaging workstation. The sensor head is an opticmechanical device which consists of imagining optics for focusing the infrared source information on the infrared detector. The infrared images are further converted into electrical signals, which are then processed for real-time display on the monitor. During the period from April 13 to May 12 2003, 72,327 outpatients and visitors entered Taipei Medical University-Wan Fang Hospital, Taipei, Taiwan. A total of 305 febrile patients (0.42%) was detected by infrared thermography. Among them, three probable SARS patients were identified after thorough studies including contact history, laboratory tests and radiology examinations. The findings suggests that infrared thermography was an effective and reliable tool ideal for mass-screening patients with fever in the initial phase of screening for SARS patients at a busy hospital which sees approximately 3,000 outpatients every weekday during the SARS epidemic.

Keywords: Fever, Infrared thermography, Mass-screening, Outpatients, SARS

# Title: Asian Pacific Journal of Tropical Medicine

Full Journal Title: Asian Pacific Journal of Tropical Medicine

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Wang, W., Li, Y.Z., Li, H.J., Xing, Y.T., Qu, G.L., Dai, J.R. and Liang, Y.S. (2012), Immunodiagnostic efficacy of detection of Schistosoma japonicum human infections in China: A meta analysis. *Asian Pacific Journal of Tropical Medicine*, **5** (1), 15-23.

Full Text: [2012\Asi Pac J Tro Med5, 15.pdf](2012/Asi%20Pac%20J%20Tro%20Med5,%2015.pdf)

Abstract: objective: To assess the diagnostic efficacy of the currently most widely used indirect hemagglutination assay (IHA) and enzyme-linked immunosorbent assay (ELISA) for detection of Schistosoma japonicum human infections. Methods: A comprehensive search was undertaken from China National Knowledge Infrastructure, Wanfang Database, VIP Database, PubMed, Cochrane Library, Science Citation Index Expanded, Proquest, and the inclusion and exclusion criteria were strictly settled. The funnel plot was used to assess the publication bias, Cochran’s Q test was employed to measure the homogeneity between studies, a summary receiver operating characteristic (SROC) curve was used to compare the diagnostic accuracy between the IHA and ELISA qualitatively by means of the Weighted Least Square method, the Ordinary Least Square method and the Robust regression method, and the diagnostic odds ratio (DOR) was drawn to compare the accuracy quantitatively. Results: Out of 785 publications, 19 papers were eventually selected for analysis. Literature quality assessment indicated that minor publication bias existed in studies pertaining IHA test, but no bias was found in literatures regarding ELISA test. The heterogeneity test showed a heterogeneity between studies was present chi(2)=466.07 and 34.67, both P values < 0.0001). The areas under the SROC curves of IHA were all higher than that of ELISA test using the three methods (Weighted Least Square method: 0.766 vs. 0.695, Ordinary Least Square method: 0.826 vs. 0.741, Robust regression: 0.815 vs. 0.715). The TPR\* values for IHA and ELISA were 0.710, 0.759, 0.749, and 0.650, 0.686 and 0.666, respectively, and OR values were 5.997, 9.937, 8.893, and 3.432, 4.784 and 3.959, respectively. The DOR of IHA was 9.41 (95% CI: 4.88-18.18), and 4.78 (95% CI: 3.21-7.13) for ELISA. Conclusions: All above results revealed that the diagnostic performance of IHA is better than that of ELISA. However, taking into account their unsatisfactory diagnostic value in areas with low infection intensity, a search for a better diagnostic test that can be applied in field situations in China should be given high priority.

Keywords: 3 Gorges Dam, Accuracy, Analysis, Assay, Assessment, Bank Loan Project, Bias, China, Citation, Climate-Change, Cochrane, Database, Diagnosis, Diagnostic Efficacy, Diagnostic Test, Dipstick Dye Immunoassay, Economic-Evaluation, Efficacy, Elisa, Enzyme-Link Immunosorbent Assay, Human, Immunodiagnosis, Impact, Indirect Hemagglutination Assay, Infection, Knowledge, Literature, Low, Meta Analysis, Meta-Analysis, Methods, Papers, Priority, Publication, Publication Bias, Publications, Pubmed, Quality, Ratio, Republic-of-China, Schistosomiasis Japonica, Science, Science Citation Index, Science Citation Index Expanded, Transmission

# Title: Asian Survey

Full Journal Title: Asian Survey

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lee, C.S. (1981), South-Korea in 1980 - The emergence of a new authoritarian order. *Asian Survey*, **21** (1), 125-143.

Full Text: [1881\Asi Sur21, 125.pdf](1881/Asi%20Sur21,%20125.pdf)

Keywords: Emergence, South Korea

# Title: ASIST 2001: Proceedings of the 64th ASIST Annual Meeting, Vol 38, 2001

Full Journal Title: ASIST 2001: Proceedings of the 64th ASIST Annual Meeting, Vol 38, 2001

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Williams, J. and Goodrum, A. (2001), Scholarly publishing on the web: Link analysis of the top 200 highly cited computer science articles on the WWW. *ASIST 2001: Proceedings of the 64th ASIST Annual Meeting, Vol 38, 2001*, **38**, 506-516.

Abstract: This paper reports the results of a study that analyzes the link density of 200 highly cited documents appearing in ResearchIndex, an autonomous citation index of literature published on the Web. The focus of this analysis is the relationship between citations and hypertext links at the publicly available document level, Our analysis indicates no significant relationship between web-based citation counts and link density within this dataset. This would seem to indicate that link density is not analogous to citation counts among documents published on the Web. The study builds on previous work by Goodrum, McCain, Lawrence and Giles (2001) that examined the overlap between citation practice in computer science literature as it appears in SCISEARCH and as indexed on the Web using autonomous citation indexing.

Keywords: Articles, Citation, Citation Counts, Citations, Computer, Highly-Cited, Indexing, Literature, Publishing, Science, World-Wide-Web

# Title: Asist Monograph Series

Full Journal Title: Asist Monograph Series

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Lederberg, J. (2000), How the Science Citation Index got started (Reprinted from Science, vol 122, pg 108-111, 1955). *Asist Monograph Series*, 25-64.

Keywords: Citation, Science Citation Index

? Borgman, C.L. (2000), Scholarly communication and bibliometrics revisited. *Asist Monograph Series*, 143-162

Keywords: Bibliometrics, Citation, Digital Library Use, Information, Issues, Web Impact Factors

? Braun, T., Glanzel, W. and Schubert, A. (2000), How balanced is the Science Citation Index’s journal coverage? A preliminary overview of macrolevel statistical data. *Asist Monograph Series*, 251-277.

Keywords: Citation, Coverage, Data, Journal

? Russell, J.M. (2000), Publication indicators in Latin America revisited. *Asist Monograph Series*, 233-250.

Abstract: This chapter discusses the implications of the structure and communication patterns of the Latin American scientific communities for the validity of publication indicators based exclusively on mainstream journal publication. Studies have suggested that scientists whose research is aimed toward advancing universal knowledge rather than the solution of local problems play a dominant role in science policy and funding decisions and in the construction of scientific excellence in the region. Mainstream publication, considered characteristic of quality scientific work, is highly favored by Latin American evaluation committees. For this reason, there is an urgent need to generate output indicators of quality work published in national and regional journals to give a more balanced picture of overall scientific achievements. Efforts made toward achieving this goal are discussed along with the need for further studies of the context and characteristics of science and technology in Latin America necessary for the generation of reliable and accurate indicators of regional activity.

Keywords: Developed-Countries, Scientific Activity, Mainstream Science, Citation Behavior, Periphery, Journals, Information, Strategies, Place

? Braun, T., Glänzel, W. and Schubert, A. (2000), How balanced is the Science Citation Index’s journal coverage? A preliminary overview of macrolevel statistical data. *Asist Monograph Series*, 251-277.

? Van Raan, A.F.J. (2000), The pandora’s box of citation analysis: Measuring scientific excellence - The last evil? *Asist Monograph Series*, 301-319.

Abstract: This paper presents an overview of advanced bibliometric methods for objective and transparent assessment of strengths and weaknesses in research performance, and monitoring of scientific developments. In the first application, we focus on the detailed analysis of research performance from an international comparative perspective. This type of analysis can be applied at different levels of aggregation, but the institutional level is particularly crucial in the “search for excellence.” We demonstrate that our recently developed indicators are very informative, despite the often poor but nonetheless dogged objections raised by opponents of bibliometric analysis. We conclude that advanced bibliometric methods are, particularly at the level of research groups (e.g., university departments and institutes) an indispensable element alongside peer review in the research evaluation process. In the second application, monitoring of scientific (basic and applied) developments, recent advances in bibliometric mapping techniques show promise. They are unique instruments to discover patterns of scientific communication, processes of knowledge dissemination, and the structural dynamics of scientific developments. We discuss “bibliometric cartography” briefly and indicate its potential for unraveling multidisciplinary developments and interfaces between science and technology. This is important, as we know that the multidisciplinary crossroads of basic and applied scientific fields are often the loci of discovery and technological innovation. We present recent, practical examples. Advanced bibliometric methods have now come to a stage of providing excitement instead of “just easy data.” They are becoming, in addition to their intrinsic value for the study of science and technology, a more and more important branch of information technology.

Keywords: Assessment, Bibliometric, Bibliometric Analysis, Bibliometric Methods, Citation, Citation Analysis, Evaluation, Impact Factors, Indicators, Information Technology, Innovation, Knowledge, Peer Review, Research, Research Evaluation, Research Performance, Science, Science and Technology, Technology

? Diamond, A.M. (2000), The complementarity of scientometrics and economics. *Asist Monograph Series*, 321-336.

Abstract: Economists, especially those of the Chicago school, value systematic empirical evidence to support generalizations concerning human behavior. Hence, when studying the behavior of academic labor markets and the efficiency of academic institutions, they have naturally turned to scientometric measures to understand the phenomena and to test their theories. Economists and scientometricians share epistemic assumptions about the value of measurement and the privileged epistemic status of science. It is therefore reasonable to hope and to expect that scientometricians and economists will find their research programs complementary.

Keywords: Cycle Research Productivity, Data Envelopment Analysis, Departments, Journals, Knowledge, Measurement, Patent Citations, Program, Publications, Replication, Research, Science, Scientific Performance, Scientometrics

? Lewison, G. (2000), Citations as a means to evaluate biomedical research. *Asist Monograph Series*, 361-372.

Abstract: Eugene Garfield developed the concept of citation of earlier papers as a means of evaluating those papers and made it not only into a science but also into a business. Despite doubts about what conventional citation analysis really means, it has been accepted worldwide as an impartial source of quantitative data on research outputs. However, founders of biomedical research are interested in innovations and in health improvements, not just the minutiae of the research method. They can now use citations on patents to the scientific literature, and citations on clinical guidelines, as proxy indicators of the utility of published papers. Some recent findings in these areas, and the beginnings of a new database of citations in newspapers, are described. However, further indicators of research utility are still needed: they will probably also depend in some way on citations, but of a different kind from those considered so far.

Keywords: Citation, Citations, Linkage, Literature, Research, Science, Technology

? Ingwersen, P., Larsen, B. and Wormell, I. (2000), Applying diachronic citation analysis to research program evaluations. *Asist Monograph Series*, 373-387.

Abstract: Diachronic versus synchronous citation analysis methods are discussed in relation to research evaluation. Using selected results from an online midterm evaluation of nine research centers funded by the Danish Strategic Environmental Research Program (1993-1998), this paper illustrates and discusses the application of five diachronic scientometric indicators. Publication activity, center and program impact factors, impact factors for journals applied by the centers, international knowledge export, and the paper-journal impact factor correlation are all shown to be well understood by the scientists involved. In an informetric sense, the indicators afford robust tools for providing fair and reliable information on publication behavior and performance. In particular, the paper-journal impact factor correlation, applying the Pearson coefficient, may contribute to further understanding of the probabilities involved in achieving high impact when scientists succeed in publishing in high impact journals. The IST databases, Science Citation Index and Social Sciences Citation Index, were used in their online versions (SciSearch and Social SciSearch) provided by Dialog Knight Ridder Information Service.

Keywords: Journal Impact, Science

? Koenig, M.E.D. and Westermann-Cicio, M. (2000), Scientometrics, cybermetics, and firm performance. *Asist Monograph Series*, 389-404

Keywords: Company, Flows, Impact, Indicators, Information, Productivity Paradox, Scientometrics, Services, Technological Innovation

# Title: Aslib Proceedings

Full Journal Title: [Aslib Proceedings](http://www.ingentaconnect.com/content/mcb/276)

ISO Abbreviated Title:

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ISSN: 0001-253X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Dansey, P. (1973), Bibliometric survey of primary and secondary information-science literature. *Aslib Proceedings*, **25** (7), 252-263.

Full Text: [1960-80\Asl Pro25, 252.pdf](1960-80/Asl%20Pro25,%20252.pdf)

Abstract: A statistical analysis is made of the professional literature of librarians and information scientists in an attempt to uncover the patterns of information flow and to evaluate the abstracting services provided for information workers. Citation analysis of some English language information science journals throws light on the principal sources used by British and American information scientists and the linguistic and national biases in the citations given. The growth of the subject matter published in the field of information science is displayed. Five abstracting services are evaluated. Their scope in terms of the language, country of origin, subject matter and format of the material selected and abstracted is determined. Coverage is assessed in comparison with three bibliographies in this subject area. Currency is determined from NRLSI acquisition dates. Key journals are found from productivity analysis of the abstracted journals. Conclusions are drawn as to the adequacy of the present services and suggestions made for possible improvements.

Smith, G.M. (1977), Key books in business and management studies - Bibliometric analysis. *Aslib Proceedings*, **29** (5), 174-188.

Full Text: [1960-80\Asl Pro29, 174.pdf](1960-80/Asl%20Pro29,%20174.pdf)

? Croft, G. (1983), An investigation into the applicability of Science Citation Index as a tool to measure the usefulness of publications of the International Tin Research Institute. *Aslib Proceedings*, **35** (6-7), 249-257.

Full Text: [1983\Asl Pro35, 249.pdf](1983/Asl%20Pro35,%20249.pdf)

Keywords: Science Citation Index

? Potter, D. and Potter, S. (1995), British professional child care: A preliminary citation analysis. *Aslib Proceedings*, **47** (5), 131-136.

Full Text: [1995\Asl Pro47, 131.pdf](1995/Asl%20Pro47,%20131.pdf)

Abstract: Human services are increasingly regarded as a discrete field of study and an area of public concern. However, little work has been done outside the USA in determining the make-up of knowledge in the field. This paper presents an initial attempt to study what constitutes the knowledge base for the child care profession in the UK. To do this the citations of five British child care journals were analysed for 1993. Reference type, country code and self-citations of journals and authors were recorded and analysed. Comparisons were drawn with an earlier citation study of social work. The study confirmed a 1:1 relationship between books and journals and showed the diffuseness of the sources upon which child care professionals draw. Although books were the most cited category individual books were rarely cited multiply. A core of journals was identified but child care journals were only fifth in frequency of citations after books, other journals, grey literature and other child-orientated journals. This suggests that the child care profession in the UK is outward-looking, although almost wholly dependent on the English language. Pointers for further research are suggested.

Keywords: Citation, Citation Analysis, Citations, Journals, Research, Self-Citations, Social Work, Social-Work

Rowlands, I. (2002), Journal diffusion factors: A new approach to measuring research influence. *Aslib Proceedings*, **54** (2), 77-84.

Full Text: [2002\Asl Pro54, 77.pdf](2002/Asl%20Pro54,%2077.pdf)

Abstract: This paper introduces a new bibliometric tool, the journal diffusion factor. An argument is presented that the bibliometric indicators commonly used to measure the quality of research (journal impact factor, immediacy index and cited half-life) offer little insight into the transdisciplinary reception (thus the wider influence) of journals. The journal diffusion factor describes a neglected dynamic of citation reception and is intended as a complementary partial indicator for research evaluation purposes, to be read alongside existing well-established indicators.

Keywords: Citation, Evaluation, Impact Factors, Journal Publishing, Journals, Libraries, Measurement, Research

Mabe, M.A. and Amin, M. (2002), Dr Jekyll and Dr Hyde: author-reader asymmetries in scholarly publishing. *Aslib Proceedings*, **54** (3), 149-157.

Full Text: [2002\Asl Pro54, 149.pdf](2002/Asl%20Pro54,%20149.pdf)

Abstract: The fundamental asymmetries of the journal system are reviewed and an examination is made of the differences between author and reader behaviour at both a quantitative and a qualitative level. Author productivity and so-called “salami-style” publishing practices are examined. An estimate of global author numbers is made. Reader and readership studies combined with bibliometric analysis allow the proposal of a means of estimating reading rates of journals.

Keywords: Academic Staff, Bibliometric Analysis, Journal Publishing, Journals

Lewison, G. (2003), Beyond outputs: New measures of biomedical research impact. *Aslib Proceedings*, **55** (1), 32-42.

Full Text: [2003\Asl Pro55, 32.pdf](2003/Asl%20Pro55,%2032.pdf)

Abstract: Biomedical research evaluation has traditionally been based on analysis of outputs and their citations by other papers. However we should try to map the routes by which research actually improves patient care and reduces illness, and develop indicators for them. We must allow for the lengthy time-scales involved and the importance of researchers being physically close to healthcare professionals, whose practice can be improved through international and governmental regulations and through approved guidelines. Each of these will depend on a body of research evidence. We must also evaluate the effects of research on policy makers and the public, who often learn about it through the World Wide Web and through the mass media, particularly newspapers. The latter provide a major bibliometric resource but one that needs to be tapped in individual countries using common standards in order to provide internationally-comparable indicators.

Keywords: Information Science, Mass Media, Research, International Standards

? Rowlands, I. (2003), Knowledge production, consumption and impact: Policy indicators for a changing world. *Aslib Proceedings*, **55** (1), 5-12.

Full Text: [2003\Asl Pro55, 5.pdf](2003/Asl%20Pro55,%205.pdf)

Abstract: This paper provides a high-level overview of some of the main research themes and preoccupations that are reported in this special ciber issue of Aslib Proceedings: New Information Perspectives. The research activities of ciber are drawn together in the quest for a better understanding of the policy implications of large-scale knowledge production systems against the backdrop of profound technical change, uncertainty over business models, and new forms of consumer behaviour. The paper presents a series of conceptual frameworks that aim to contextualise ciber’s work in bibliometrics, cybermetrics, research evaluation, scholarly communication, user studies, publishing strategies and policy analysis. The transparency that metrics can bring to the evaluation debate and the pivotal role of human information behaviour in determining those metrics, are discussed.

Keywords: Bibliometrics, Evaluation, Impact, Indicators, Information Management, Knowledge, Knowledge Processes, Publishing, Research, Research Evaluation, User Studies

? Lewison, G. (2003), Beyond outputs: New measures of biomedical research impact. *Aslib Proceedings*, **55** (1), 32-42.

Full Text: [2003\Asl Pro55, 32.pdf](2003/Asl%20Pro55,%2032.pdf)

Abstract: Biomedical research evaluation has traditionally been based on analysis of outputs and their citations by other papers. However we should try to map the routes by which research actually improves patient care and reduces illness, and develop indicators for them. We must allow for the lengthy time-scales involved and the importance of researchers being physically close to healthcare professionals, whose practice can be improved through international and governmental regulations and through approved guidelines. Each of these will depend on a body of research evidence. We must also evaluate the effects of research on policy makers and the public, who often learn about it through the World Wide Web and through the mass media, particularly newspapers. The latter provide a major bibliometric resource but one that needs to be tapped in individual countries using common standards in order to provide internationally-comparable indicators.

Keywords: Bibliometric, Biomedical Research, Citation Ranking, Citations, Countries, Evaluation, Health, Impact, Indicators, Information Science, International Standards, Journals, Mass Media, MMR Vaccine, Papers, Publication, Research, Research Evaluation, Standards, United-States

Lewison, G. (2003), The publication of cancer research papers in high impact journals. *Aslib Proceedings*, **55** (5-6), 379-387.

Full Text: [2003\Asl Pro55, 379.pdf](2003/Asl%20Pro55,%20379.pdf)

Abstract: Examines a set of over 27,000 UK papers in cancer research in order to identify the individual factors that influence the impact category of the journals in which they are published, using multiple regression analysis. The most important independent variables that have a positive effect are the numbers of authors and funding bodies, the research level (from clinical to basic), and the presence of certain universities, or of the USA, in the address field. Inter-lab co-operation was shown to have a negative effect on journal impact category, as was international co-authorship. It is because such partnerships usually involve more authors and funding for the research that they are perceived to lead to higher impact work. There is also a tendency for papers to be published in higher impact journals in later years, probably because of market forces, which means that such journals will tend to expand.

Keywords: Cancer, Europe, Funding Sources, Institute, Journals, Literature, Research, Science, United-Kingdom

? Rowlands, I. (2005), Emerald authorship data, Lotka’s law and research productivity. *Aslib Proceedings*, **57** (1), 5-10.

Full Text: [2005\Asl Pro57, 5.pdf](2005/Asl%20Pro57,%205.pdf)

Abstract: Purpose - This paper offers a practical insight into the application of Lotka’s law of author productivity to the question of how likely it is that an author will return to a particular publisher (rather than make another contribution to a subject literature, which is its usual application). The question of author loyalty, especially repeat visits, is one which is of great interest to publishers. Design/methodology/approach - This paper shows, possibly for the first time, that the author productivity distribution predicted by Lotka’s law for subject literatures also holds for publisher aggregates, in this case, all Emerald authors. Findings - The ideas presented here are speculative and programmatic: they raise questions and provide a robust intellectual framework for further research into the determinants of author loyalty, as seen from the publisher side. Practical implications - The implications for commissioning editors and marketing departments in journal publishing houses are that repeat visiting authors are indeed scarce commodities, not necessarily because of barriers put in their way by publishers, but because research production is very asymmetrically skewed in favour of a small productive elite. Originality/value - By analysing survey data it should be possible, within very broad parameters, to identify clusters of say high, medium and low research activity authors. This would provide insight into potential “hot spots” of future publishing intent and, in the case of dense and overworked research areas, early warning as to when to start looking elsewhere for future articles.

Keywords: Activity, Aggregates, Authorship, Barriers, Brand Loyalty, Clusters, Distribution, Journal, Law, Lotka’s Law, Low, Paper, Parameters, Production, Productivity, Publishing, Research, Research Productivity, Research Results, Survey

Webster, B.M. (2005), International presence and impact of the UK biomedical research, 1989-2000. *Aslib Proceedings*, **57** (1), 22-47.

Full Text: [2005\Asl Pro57, 22.pdf](2005/Asl%20Pro57,%2022.pdf)

Abstract: Purpose - To map UK biomedical research by analysing biomedical publications from authors with UK institutional affiliation and indexed in Science Citation Index (SCI) and Social Sciences Citation Index (SSCI). Design, methodology, approach - Bibliometric methods to assess the volume of research published, its impact and sources of funding of biomedical research in the UK are used. The analyses also include an examination of national and international collaboration, leading regions and institutions (by volume of output), types of research carried out and its potential impact factor. This was done for all of biomedicine and 32 selected sub-fields. The data used span 12 years, allowing changes and developments over time to be tracked. Findings - The UK’s position as the second largest producer of biomedical research is under threat from Japan and Germany and other countries with traditionally weaker biomedical research base. Strength in malaria and asthma research and relative weakness in surgery and renal medicine is notable. The profile of UK biomedical research has changed significantly in the period analysed, with a doubling of the level of international collaboration, a significant increase in basic research papers and an increase in the potential impact of UK publications. A relative decrease of acknowledgement of UK Government funding was noted, as were increased acknowledgements to UK not-for-profit and international organisations. Practical implications - Bibliometric analyses can provide reliable tools in mapping the development of scholarly disciplines which can be of use, as demonstrated in this paper, in research policy, as well as in domain analysis in information science, library collection development or publishing. Originality, value - Apart from policy applications, bibliometric research of this type can provide valuable information about changes in the patterns of scholarly communication within a domain (areas of interest in sociology of science and information science) and inform collection development policies in libraries and information centres (by describing literatures: ageing and obsolescence, volume and impact).

Keywords: Affiliation, Ageing, Analysis, Asthma, Bibliometric, Bibliometric Research, Biomedical, Biomedical Research, Biomedicine, Biotechnology, Changes, Collaboration, Communication, Development, Domain Analysis, Examination, Germany, Impact Factor, Information, Information Science, Institutions, International, Japan, Malaria, Medicine, Methods, Obsolescence, Papers, Policy, Potential, Publications, Publishing, Renal, Research, Research Policy, Research Results, Scholarly Communication, SCI, Science, Science Citation Index, Sociology, Sociology of Science, SSCI, Subfields, Surgery, UK, United Kingdom

? Lewison, G. (2005), Guest editorial - The work of the Bibliometrics Research Group (City University) and associates. *Aslib Proceedings*, **57** (3), 197-199.

Full Text: [2005\Asl Pro57, 197.pdf](2005/Asl%20Pro57,%20197.pdf)

? Roa-Atkinson, A. and Velho, L. (2005), Interactions in knowledge production - A comparative case study of immunology research groups in Colombia and Brazil. *Aslib Proceedings*, **57** (3), 200-216.

Full Text: [2005\Asl Pro57, 200.pdf](2005/Asl%20Pro57,%20200.pdf)

Abstract: Purpose - To provide an empirical contribution to analyse the dynamics of research groups in knowledge production in an interdisciplinary research field in two scientifically peripheral countries (Colombia and Brazil). Design, methodology, approach - This dynamic is analysed in the interdisciplinary area of immunology through a comparative study of Brazilian and Colombian research groups. The practices of publication, collaborative links and patterns of acknowledgements provided the framework for this study. Quantitative and qualitative tools were used; in particular a bibliometric study was complemented with information derived from semi-structured interviews with members of the research communities selected. Findings - The bibliometric study allowed the construction of some indicators: channels of publication, impact of the research outputs, citations and patterns of collaboration. Also, a database with acknowledgements was created to identify the different actors who take part in the process of knowledge production. These indicators, interpreted in the light of qualitative analysis, throw considerable light on how the different groups work on the cognitive and social aspects of knowledge production. Research limitations, implications - This study is limited to 31 leading research groups from Colombia and Brazil. Originality, value - This paper starts to redress the situation of a lack of empirical studies in developing countries in the use of acknowledgements as a tool to examine formal and informal scientific collaboration and as indicator of accountability to funding bodies. This work provides an empirical contribution to policy-makers and scientific communities in the task of understanding the dynamics of knowledge production in an interdisciplinary area combining different approaches.

Keywords: Acknowledgment, Bibliometric, Bibliometric Study, Brazil, Co-Authorships, Colombia, Group Dynamics, Information Research, International Scientific Collaboration, Latin-America, Life Sciences, Output, Patterns, Publication, Research, Research Work, Sciences

? Rangnekar, D. (2005), Acknowledged: Analysing the bibliometric presence of the multiple sclerosis society. *Aslib Proceedings*, **57** (3), 247-260.

Full Text: [2005\Asl Pro57, 247.pdf](2005/Asl%20Pro57,%20247.pdf)

Abstract: Purpose - To conduct an analysis of the bibliometric presence of a patient group, the Multiple Sclerosis Society, within its relevant biomedical sub-field. Design, methodology, approach - Publications in the multiple sclerosis sub-field for 1988-1999 in the Research Outputs Database constitute the data-set. Proxy measures, based on funding acknowledgement counts, are used to analyse the bibliometric presence of the society in comparison with other leading agencies, focusing on visibility, research orientation and research impact. The results are discussed within the frame of an evolutionary economics of knowledge production and the larger policy debate concerning the public funding of science. Findings - The society is the most frequently acknowledged funding agency and it distinguishes itself by the clustering of its acknowledgements in the area of clinical investigation. With a high and leading research impact, the society is considered an influential actor in the relevant biomedical sub-field. Originality, value - This paper fills a gap in the literature on the public funding of science by drawing attention to the important performance and presence of patient groups as funding agencies.

Keywords: Academic Research, Aid Agencies, Bibliometric, Breast-Cancer, Citation, Disabled People, Financing, Health, Innovation, Journal Impact Factors, Patients Associations, Public Science, Publications, Quantitative Methods, Research, Researchers, Technology, United Kingdom

? Rowlands, I. and Nicholas, D. (2007), The missing link: journal usage metrics. *Aslib Proceedings*, **59** (3), 222-228.

Full Text: [2007\Asl Pro59, 222.pdf](2007/Asl%20Pro59,%20222.pdf)

Abstract: Purpose - The aim of this short communication is to contribute to a growing debate about how we can measure the “quality” of journals. More specifically, the paper argues the need for a new range of standardized indicators based on reader (rather than author-facing) metrics. Design/methodology/approach - This is a thought experiment, outlining the kinds of usage indicators that could be developed alongside the traditional ISI measures of impact, immediacy and obsolescence. Findings - The time is ripe to develop a set of standardised. measures of journal usage that are as easy to understand, and as universally accepted, as ISI’s current citation-based indicators. By linking article publication year to full text downloads, this article argues that very considerable value could be extracted from what, in many cases, is almost uninterpretable data. Practical implications - Indicators in the form proposed could find a wide variety of applications, from helping librarians to assess the potential value-for-money of bundled journal deals, to helping policy-makers and scholarly communication researchers to better understand the dynamics of knowledge diffusion. Originality/value - The development of standardized usage factors in the form suggested here would radically shift the centre of gravity in bibliometrics research from the author to the reader. This remains largely unexplored territory.

Keywords: Applications, Bibliometrics, Communication, Current, Development, Diffusion, Dynamics, Experiment, Gravity, Impact, Indicators, Isi, Journal, Journals, Knowledge, Library, Measurement, Metrics, Paper, Publication, Quality, Range, Research, Scholarly Communication, Serials

? Willett, P. (2008), A bibliometric analysis of the literature of chemoinformatics. *Aslib Proceedings*, **60** (1), 4-17.

Full Text: [2008\Asl Pro60, 4.pdf](2008/Asl%20Pro60,%204.pdf)

Abstract: Purpose - The purpose of this article is to analyse the literature of chemoinformatics, a subject that has arisen over the last few years and that draws on techniques from a range of disciplines, most notably chemistry (particularly computational and medicinal chemistry), computer science and information science. Design/methodology/approach - Discusses subject, author and citation searches of (principally) the web of knowledge database. Findings - The Journal of Chemical Information and Modeling (previously the Journal of Chemical Information and Computer Sciences) is the core journal for the subject, but with many significant papers being published in journals whose principal focus is molecular modelling, quantitative structure-activity relationships or more general aspects of chemistry. The discipline is international in scope, and many of the most cited papers describe software packages that play a key role in modern chemoinformatics research. Originality/value - This is the first bibliometric study of chemoinformatics, and one of only a very few that consider the bibliometrics of computational chemistry more generally.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Bibliometric Study, Bibliometrics, Chemistry, Citation, Database, Databases, Docking, Drug Discovery, First, General, Impact, Information, Information Retrieval, Information Science, International, Journal, Journals, Knowledge, Literature, Modeling, Modelling, Papers, Prediction, Program, Protein, Purpose, Research, Role, Science, Scope, Search, Software, Techniques, Validation, Web

? Mozaffarian, M. and Jamali, H.R. (2008), Iranian women in science: A gender study of scientific productivity in an Islamic country. *Aslib Proceedings*, **60** (5), 463-473.

Full Text: [2008\Asl Pro60, 463.pdf](2008/Asl%20Pro60,%20463.pdf)

Abstract: Purpose - The aim of the paper is to explore and test gender differences in the authorship of Iranian journal articles. Design/methodology/approach - A list of articles published by Iranian authors in ISI journals in 2003 was obtained from the Web of Science. The names of authors were searched in a specific database as well as the web to find their first names and hence their gender. The articles were then broken down by gender and subject category. International collaborations of the authors were also investigated. Findings - The productivity of female authors at the individual level as measured by article per author share was lower than male authors. In total, females accounted for 6 per cent and males for 94 per cent of the articles published in 2003. A chi-square test showed that female contribution was significantly lower than expected. Originality/value - The study is the first to investigate gender participation in scientific productivity in Iran and most likely in a Muslim country. The article highlights the need for qualitative studies on the gender aspect of scientific productivity in Muslim countries.

Keywords: Academic Staff, Authors, Authorship, Contribution, Gender, Iran, Journal, Journals, Productivity Rate, Research Work, Science, Sex-Differences, Web of Science, Women

? Isetta, M. (2008), Evidence-based practice, healthcare delivery and information management a contemporary case study. *Aslib Proceedings*, **60** (6), 619-641.

Full Text: [2008\Asl Pro60, 619.pdf](2008/Asl%20Pro60,%20619.pdf)

Abstract: Purpose - The evidence-based practice (EBP) model appears to have established itself as the principal change driver and discourse for the healthcare sector. This study sets out to identify the emergence of the term EBP in the professional literature to establish an empirical foundation for discussion. The understanding of and relevance to healthcare practitioners in a large South West London hospital are assessed and their views related to the perspective of library and information professionals to assess implications for practice. Design/methodology/approach - An extensive literature search was carried out and the data generated used to produce a growth curve for the literature. A survey of health care professionals using e-mail and follow-up interviews was undertaken at the case hospital. Findings - Between 1998 and 2004 the number of papers appearing to discuss the theme increased four-fold. The first recorded reference was in 1991. The EBP model had strong official and political support in the field. On the user sample there is evidence of resistance to the orthodoxy. Practical implications - The EBP model - variously adopted by several healthcare agencies - has placed information management at the centre of the care process. In spite of this, there are few definite implications for the role of library and information professionals, since the world of information and the UK NHS itself are continually in a state of flux, and the current EBP dominance may neither strengthen nor safeguard it. Originality/value - The bibliometric study provides a baseline. The study of healthcare professionals is a case study to add to knowledge of practice.

Keywords: Attitudes, Baseline, Bibliometric, Bibliometric Study, Care, Case Study, Change, Data, Delivery, Discourse, Dominance, Email, Emergence, Empirical, Evidence, Evidence Based, Evidence-Based, Evidence-Based Medicine, Evidence-Based Practice, Exploration, Field, First, Follow-up, Future, Growth, Health, Health Care, Health Care Professionals, Healthcare, Hospital, Information, Information Services, Interviews, Knowledge, Libraries, Literature, Management, Medical Libraries, Model, National Health Service, NHS, Papers, Perceptions, Practice, Practitioners, Process, Professional, Professionals, Questionnaire Survey, Reference, Relevance, Resistance, Role, Search, Sector, State, Support, Surgeons, Survey, Term, UK, Understanding, United Kingdom, World

? Olmeda-Gomez, C., Perianes-Rodriguez, A., Ovalle-Perandones, M.A., Guerrero-Bote, V.P. and Anegon, F.D. (2009), Visualization of scientific co-authorship in Spanish universities from regionalization to internationalization. *Aslib Proceedings*, **61** (1), 83-100.

Full Text: [2009\Asl Pro61, 83.pdf](2009/Asl%20Pro61,%2083.pdf)

Abstract: Purpose - The purpose of this paper is to visualize the inter-university and international collaboration networks generated by Spanish universities based on the co-authorship of scientific articles. Design/methodology/approach - The approach takes the form of formulation based on a bibliometric analysis of Spanish university production from 2000 to 2004 as contained in Web of Science databases, applying social network visualization techniques. The co-authorship data used were extracted with the total counting method from a database containing 100,710 papers. Findings - Spanish inter-university collaboration patterns appear to be influenced by both geographic proximity, and administrative and political affiliation. Inter-regional co-authorship encompasses regional sub-networks whose spatial scope conforms rather closely with Spanish geopolitical divisions. Papers involving international collaboration are written primarily with European Union and North and Latin American researchers. Greater visibility is attained with international co-authorship than with any other type of collaboration studied. Research limitations/implications - Impact was measured in terms of journals rather than each individual paper. The co-authorship data were taken from the Web of Knowledge and were not compared with data from other databases. Practical implications - The data obtained in the paper may provide guidance for public policy makers seeking to enhance and intensify the internationalization of scientific production in Spanish universities. Originality/value - The Spanish university system is in the midst of profound structural change. This is the first paper to describe Spanish university collaboration networks using social network visualization techniques, covering an area not previously addressed.

Keywords: Affiliation, American, Analysis, Approach, Authorship, Bibliometric, Bibliometric Analysis, Change, Co-Authorship, Coauthorship, Collaboration, Collaboration Networks, Cooperation, Data, Database, Databases, European Union, First, Formulation, Geographical Proximity, Guidance, Impact, International, Internationalization, Journals, Latin American, Network, Network Analysis, Networks, North, Papers, Patterns, Policy, Production, Productivity, Public, Public Policy, Publications, Purpose, Regional, Regionalization, Research, Research Collaboration, Science, Scientific Production, Scope, Social, Social Network, Social Networks, Spain, Spanish, Techniques, Universities, University, Visibility, Visualization, Web of Science

? Mahmood, I., Rowley, J. and Hartley, R. (2009), Scientific publishing: A case study of Libyan scientists. *Aslib Proceedings*, **61** (4), 380-393.

Full Text: [2009\Asl Pro61, 380.pdf](2009/Asl%20Pro61,%20380.pdf)

Abstract: Purpose - The paper aims to report on a research project that explores the extent and scope of scientific publishing, communication, and collaboration amongst Libyan scientists. Design/methodology/approach - The paper commences with a literature review on scientific communication and publishing, including a specific focus on such activities in developing countries. A bibliometric analysis of the papers published by scientists in research centres affiliated to Libya’s National Centre for Scientific Research was conducted in order to investigate the extent and nature of scholarly communication of Libyan scientists. Findings - Libyan scientists are a community that works in research teams, largely comprised of scientists in Libya, but, which, on the other hand, is actively disseminating the findings of its research to a wider international audience. This is evident from the publications of 45 per cent of papers in English, and a significant level of publication in countries outside Libya. Further, the extent to which publication is through conferences and symposia is evidence of engagement in informal communication within and beyond the scientific community in Libya. Originality/value - This is the first study of scientific publishing and communication activities in Libya. It offers useful insights into a variety of aspects of communication and dissemination of research findings. As such it provides a useful contribution towards understanding the potential impact of new models of scholarly publishing, both in Libya, and in other developing countries.

Keywords: Bibliometric Analysis, Collaboration, Developing Countries, Generation and Dissemination of Information, Impact, Information, Internet, Internet, Libya, Minds, Publications, Research, Scholarly Communication, Sciences, Social-Scientists

? Li, J. and Willett, P. (2009), ArticleRank: A PageRank-based alternative to numbers of citations for analysing citation networks. *Aslib Proceedings*, **61** (6), 605-618.

Full Text: [2009\Asl Pro61, 605.pdf](2009/Asl%20Pro61,%20605.pdf)

Abstract: Purpose - The purpose of this paper is to suggest an alternative to the widely used Times Cited criterion for analysing citation networks. The approach involves taking account of the natures of the papers that cite a given paper, so as to differentiate between papers that attract the same number of citations. Design/methodology/approach - ArticleRank is an algorithm that has been derived from Google’s PageRank algorithm to measure the influence of journal articles. ArticleRank is applied to two datasets - a citation network based on an early paper on webometrics, and a self-citation network based on the 19 most cited papers in the Journal of Documentation - using citation data taken from the Web of Knowledge database. Findings - ArticleRank values provide a different ranking of a set of papers from that provided by the corresponding Times Cited values, and overcomes the inability of the latter to differentiate between papers with the same numbers of citations. The difference in rankings between Times Cited and ArticleRank is greatest for the most heavily cited articles in a dataset. Originality/value - This is a novel application of the PageRank algorithm.

Keywords: Bibliographies, Citation, Citation Network, Citations, Knowledge, Network, Publications, Reference Services, Self-Citation

? Davarpana, M.R. and Behrouzfar, H. (2009), International visibility of Iranian ISI journals: A citation study. *Aslib Proceedings*, **61** (4), 407-419.

Full Text: [2009\Asl Pro61, 407.pdf](2009/Asl%20Pro61,%20407.pdf)

Abstract: Purpose - This research paper aims to investigate the internationalization and visibility of Iranian scientific journals covered by the Institute for Scientific Information (ISI) between 2000 and 2006. Design/methodelogy/approach - A total of 1,298 articles published in seven Iranian ISI journals and a random sample of 1,298 articles written by Iranians and published in non-Iranian ISI journals between 2000 and 2006 were selected. Impact factor (IF), total citation (TC), citation rates, self-citation, foreign citation, international citation (IC), international authorship, and subject distribution were analyzes for the collections. Findings - Results indicated that: the visibility rate of Iranian journals is low compared to their international counterparts; the international visibility of Iranian journals differs among disciplines; the increasing citation rate is less than the increase in publication rate; and the majority of authors who published in these journals were Iranian. Originality/value - Mere inclusion of scientific journals in the ISI does not necessarily lead to an increase in international visibility. The study highlights the need for more studies on the techniques to increase the visibility of scientific journals of the developing countries.

Keywords: Authorship, Chinese Scientific Journals, Citation, Developing Countries, Generation and Dissemination of Information, Impact, Impact Factor, Index, Iran, ISI, Journals, Lead, Publication, Publications, Research, Science, Sciences, Scientific Journals, Self-Citation, Serials

? Aharony, N. (2010), Information literacy in the professional literature: An exploratory analysis. *Aslib Proceedings*, **62** (3), 261-282.

Abstract: Purpose - The current study aims to review the different publications dealing with information literacy and the emerging trends reflected over the ten years, 1999-2009, in the Web of Science (WOS) database. Design/methodology/approach - The study presents both a statistical descriptive analysis of document type, subject areas, authors, source titles, publication years, languages, countries and keywords of publications extracted from the WOS database, as well as a thorough content analysis of keywords and abstracts extracted from the WOS database. Findings - The main results suggest that the term information literacy has various characteristics in an additional and interesting context: health and medicine. This finding may reflect a tendency of association between information literacy and health and medicine and stresses people’s need for information literacy in this specific context. Originality/value - The current study emphasises the notion that information literacy is no longer an issue for librarians or educators only.

Keywords: Analysis, Authors, Content Analysis, Health And Medicine, Information, Information Literacy, Internet, Literacy, Literature, Medicine, Professional, Publication, Publications, Research Work, Review, Science, Seeking, Sites, Statistical, Trends, Web, Web of Science, Workplace

? Perianes-Rodríguez, A., Olmeda-Gómez, C., Ovalle-Perandones, M.A., Chinchilla-Rodriguez, Z. and Moya-Anegon, F. (2011), R&D collaboration in 50 major Spanish companies. *Aslib Proceedings*, **63** (1), 5-27.

Full Text: [2011\Asl Pro63, 5.pdf](2011/Asl%20Pro63,%205.pdf)

Abstract: Purpose - Although the role of enterprise in R&D is broadly acknowledged, few attempts have been made to gather data for analyzing the nature and scope of private sector collaboration. This study aims to deliver empirical results based on quantitative data to gain insight into the role of private enterprise as an indispensable actor in scientific development and innovation. Design/methodology/approach - The study aimed to deliver empirical results based on quantitative data to gain insight into the role of private enterprise as an indispensable actor in scientific development and innovation. To this end, an analysis was conducted of the contribution made by Spanish business, focusing on the 50 most active companies in terms of internationally visible scientific output, from three perspectives. Findings - The findings provide insight into business involvement in the R&D system based on: research papers published; national, international and sectoral collaboration patterns; structural patterns; and the identification of the most prominent companies from a systematic comparison of their research results and their position in the resulting collaboration network. Research limitations/implications - Bibliometric analyses do not measure all types of publications. Indicators are usually based on data in the Thomson Reuters databases, which are regarded as being representative of peer-reviewed, publicly accessible papers with high international visibility and impact. The Thomson Reuters databases feature a series of advantages that make them indispensable for studies on scientific collaboration. Originality/value - One of the core ideas of this study is the emphasis on the essential role of collaboration in improving scientific results, as borne out by the correlation between the clustering coefficient and the hybrid indicators. The findings also provide proof of the success of strategies for institutional collaboration. The foregoing shows that the application of hybrid indicators to institutional aggregates yields novel results not explored in preceding studies.

Keywords: Aggregates, Analyses, Analysis, Application, Bibliometric, Biotechnology, Business, Clustering, Collaboration, Comparison, Correlation, Data, Databases, Development, Feature, Firms, Hybrid, Identification, Impact, Indicators, Industry, Information Science and Documentation, Innovation, Innovation Systems, International, Measure, Network, Organization, Papers, Peer-Reviewed, Private Enterprise, Private Sector, Private Sector Organizations, Public Science, Publications, Research, Research and Development, Research Cooperation, Research Results, Role, Scientific Collaboration, Scientific Output, Scope, Sector, Spain, Technology, Triple-Helix, Visibility

? Zhu, Q.L. and Willett, P. (2011), Bibliometric analysis of Chinese superconductivity research, 1986-2007. *Aslib Proceedings*, **63** (1), 101-119.

Full Text: [2011\Asl Pro63, 101.pdf](2011/Asl%20Pro63,%20101.pdf)

Abstract: Purpose - The purpose of this paper is to cam, out a bibliometric analysis of the development of Chinese research in superconductivity since the advent of high-temperature superconductivity (HTS) in the mid-1980s, and to compare Chinese research with that of its international competitors. Design/methodology/approach - This research used publications, citations, journals, subject categories and institutional data from the Web of Science database. Findings - Chinese HTS research has grown steadily in importance over the period, with a significant increase in peer-recognition, as measured by citations from non-Chinese researchers. A comparison with superconductivity research in England, France, Germany, Japan, Russia and the USA shows that the impact of the Chinese work is growing relative to the other countries, with a cluster analysis showing that the current bibliometric status of Chinese research is most similar to that of England, France and Russia. Originality/value - This is both the first bibliometric study of Chinese research in superconductivity and the first bibliometric comparison of different countries’ research in superconductivity since the advent of HTS. Cluster analysis provides an interesting way of identifying analogous international bibliometric profiles.

Keywords: Analysis, Bibliometric, Bibliometric Analysis, Bibliometric Study, China, Chinese, Citation, Citations, Cluster, Cluster Analysis, Communication, Comparison, Countries, Data, Data Analysis, Database, Development, Discovery, England, First, France, Germany, Impact, Indicators, Information Research, International, Japan, Journals, Performance, Perspective, Profiles, Publications, Purpose, Research, Russia, Science, Scientists, Superconductivity, USA, Web of Science, Work

? Bakri, A. and Willett, P. (2011), Computer science research in Malaysia: A bibliometric analysis. *Aslib Proceedings*, **63** (2-3), 321-335.

Full Text: [2011\Asl Pro63, 321.pdf](2011/Asl%20Pro63,%20321.pdf)

Abstract: Purpose - The purpose of this paper is to analyse the publications of, and the citations to, the current staff of 19 departments of computer science in Malaysian universities, and to compare these bibliometric data with expert peer reviews of Malaysian research performance. Design/methodology/approach - This paper searches citation of the Scopus and Web of Science databases. Findings - Both publication and citation rates are low, although this is at least in part due to some Malaysian universities having only a teaching function. More of the departments’ publications were identified in Scopus than in Web of Science, but both databases were needed for comprehensive coverage. Statistically significant relationships were observed between the departments’ publication and citation counts and the rankings of the departments’ parent universities in two evaluations of the research performance of Malaysian universities. Originality/value - This is the first comparison of bibliometric and peer-review data for Malaysia, and, more generally, for a country with a newly developed higher education system.

Keywords: Archaeology, Bibliometric, Bibliometric Analysis, Citation, Citation Counts, Citations, Computer Studies, Databases, Education, Google-Scholar, h-Index, Higher Education, Impact, Indicators, Information, Malaysia, Peer Review, Productivity, Publication, Publications, Research, Research Performance, Scopus, Web of Science, Web-of-Science

# Title: Assessment

Full Journal Title: Assessment

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Blashfield, R.K. and Archer, G. (2001), A comparative view of the new joural: *Assessment*. *Assessment*, **8** (3), 339-350.

Full Text: [2001\Assessment8, 339.pdf](2001/Assessment8,%20339.pdf)

Abstract: The reference sections from all articles in the 1997 volumes of Assessment, Journal of Personality Assessment, and Psychological Assessment were entered into a database and analyzed. An article published in Assessment averaged almost 31 references. An article published in journal of Personality Assessment contained an average of 33 references. Psychological Assessment averaged 38 references per article. The median age of the references in the three journals was 8 years with an interquartile range of 4 to 14 years. The Journal of Personality Assessment had the largest number of citations in this database of 5,316 references. Each of these received a relatively large number of their citations from articles published in the same journal (self-citations). Randomly selected articles from the 1997 volume of Assessment received fewer citations in the Social Science Citation Index than a similar set of articles from the other two journals. However, the data on Assessment, when compared with data available on other new scientific publications, suggests that Assessment is doing as well as other fledgling journals.

Keywords: Citation Analysis, Co-Authorship Patterns, Psychological Testing, References, Scientific Journals

# Title: Assessment & Evaluation in Higher Education

Full Journal Title: Assessment & Evaluation in Higher Education

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bermingham, V., Watson, S. and Jones, M. (2010), Plagiarism in UK law schools: Is there a postcode lottery? *Assessment & Evaluation in Higher Education*, **35** (1), 1-15.

Full Text: [2010\Ass Eva Hig Edu35, 1.pdf](2010/Ass%20Eva%20Hig%20Edu35,%201.pdf)

Abstract: The discussion of issues relating to academic dishonesty in the UK higher education sector has become increasingly intense in recent years and has often been subject to the media spotlight. This study examines the policies, procedures and penalties at law schools across the UK when dealing with allegations of plagiarism. Data were obtained in two stages via questionnaires and structured interviews with members of staff. The considerable degree of diversity which emerges is discussed and the possible implications of such diversity are examined.

Keywords: Definitions, Education, Inconsistencies, Law Students, Plagiarism, Policies

? Elander, J., Pittam, G., Lusher, J., Fox, P. and Payne, N. (2010), Evaluation of an intervention to help students avoid unintentional plagiarism by improving their authorial identity. *Assessment & Evaluation in Higher Education*, **35** (2), 157-171.

Full Text: [2010\Ass Eva Hig Edu35, 157.pdf](2010/Ass%20Eva%20Hig%20Edu35,%20157.pdf)

Abstract: Students with poorly developed authorial identity may be at risk of unintentional plagiarism. An instructional intervention designed specifically to improve authorial identity was delivered to 364 psychology students at three post-1992 universities in London, UK, and evaluated with before-and-after measures of beliefs and attitudes about academic authorship, using the Student Authorship Questionnaire. Changes in questionnaire scores showed that the intervention led to significantly increased confidence in writing, understanding of authorship, knowledge to avoid plagiarism, and top-down approaches to writing, and significantly decreased bottom-up and pragmatic approaches to writing. For understanding of authorship, knowledge to avoid plagiarism and pragmatic approaches to writing, significant intervention by year of study interaction effects showed that the greatest improvements were among year one undergraduates. Direct evaluative feedback showed that 86% of students believed the intervention helped them avoid plagiarism and 66% believed it helped them write better assignments. Post-intervention focus groups revealed changed student understandings about authorial identity and academic writing. The results show that interventions can help students avoid unintentional plagiarism by adopting more authorial roles in their academic writing. Further research could explore other influences on authorial identity, and examine the impact of authorial identity interventions on other outcome indicators.

Keywords: Academic Literacy, Authorial Identity, Authorship, College, Evaluation, Interventions, Inventory, Plagiarism, Questionnaire, Research, Writing

? Heather, J. (2010), Turnitoff: Identifying and fixing a hole in current plagiarism detection software. *Assessment & Evaluation in Higher Education*, **35** (6), 647-660.

Full Text: [2010\Ass Eva Hig Edu35, 647.pdf](2010/Ass%20Eva%20Hig%20Edu35,%20647.pdf)

Abstract: In recent times, plagiarism detection software has become popular in universities and colleges, in an attempt to stem the tide of plagiarised student coursework. Such software attempts to detect any copied material and identify its source. The most popular such software is Turnitin, a commercial system used by thousands of institutions in more than 100 countries. Here, we show how to fix a loophole in Turnitin’s current plagiarism detection process. We demonstrate that, in its current incarnation, one can easily create a document that passes the plagiarism check regardless of how much copied material it contains; we then show how to improve the system to avoid such attacks.

Keywords: Academic Misconduct, JISC, JISC-PAS, Plagiarism, Plagiarism Detection, Turnitin

# Title: Astronomy and Astrophysics

Full Journal Title: Astronomy and Astrophysics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Notes: highly cited > 5000 times

? Shakura, N.I. and Sunyaev, R.A. (1973), Black holes in binary systems - Observational appearance. *Astronomy and Astrophysics*, **24** (3), 337-355.

Full Text: [1960-80\Astr Ast24, 337.pdf](1960-80/Astr%20Ast24,%20337.pdf)

# Title: Astronomical Data Analysis II

Full Journal Title: Astronomical Data Analysis II

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kurtz, M.J., Eichhorn, G., Accomazzi, A., Grant, C.S. and Murray, S.S. (2002), Second order bibliometric operators in the astrophysics data system. *Astronomical Data Analysis II*, **4847**, 238-245.

Abstract: Second order relational operators are functions which take lists which have been generated by a database query, and from those lists form sets of other lists, which can then be merged and sorted on the basis of one or more of the attributes of the items in the lists. The NASA Astrophysics Data System is unique among bibliometric information retrieval systems in the degree to which users are permitted to make use of these concepts. Given a knowledge of how the second order operators work, ADS users can create complex logical algebras which facilitate the discovery of very highly specific information.

Keywords: Bibliometric, Bibliometrics, Data Analysis, Database, Information Retrieval, Knowledge, NASA ADS, System

# Title: Astronomische Nachrichten

Full Journal Title: [Astronomische Nachrichten](http://www3.interscience.wiley.com/journal/60500255/home)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Sánchez, S.F. and Benn, C.R. (2004), Impact of astronomical research from different countries. *Astronomische Nachrichten*, **325** (5), 445-450.

Full Text: [2004\Ast Nac325, 445.pdf](2004/Ast%20Nac325,%20445.pdf)

Abstract: The impact of astronomical research carried out by different countries has been compared by analysing the 1000 most-cited astronomy papers published 1991-8 (125 from each year). 61% of the citations are to papers with first authors at institutions in the USA, 11% in the UK, 5% in Germany, 4% in Canada, 3% in Italy and 3% in France. 17% are to papers with first authors in ESO countries. The number of citations is approximately proportional to the number of IAU members in a given country. The number of citations per IAU astronomer is highest in the USA, Switzerland and the UK. Within continental Europe, the number of citations per IAU astronomer varies little from country to country, but is slightly higher in the north than in the south. The sample of 1000 papers maps regional subject preferences. 62% of the extragalactic papers in the sample were published from the USA, 15% from the UK, 23% from other countries (mainly in continental Europe). 62% of the papers on stars were also published from the USA, but the fractions from the UK and from other countries are 2% and 36% respectively.

Keywords: Authors, Bibliometrics, Citations, Countries, Europe, Favors, Germany, Impact, Italy, Papers, Research, Scienciometrics, Scientific Productivity

# Title: Astronomy & Geophysics

Full Journal Title: Astronomy & Geophysics

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Blustin, A. (2007), Publication and citation statistics for UK astronomers. *Astronomy & Geophysics*, **48** (6), 32-35.

Abstract: This article presents a survey of publication and citation statistics for 835 UK professional astronomers: the majority of academics and contract researchers within the UK astronomical community. I provide histograms of these bibliometrics for the whole sample as well as of the median values for the individual departments. I discuss the distribution of top bibliometric performers in the sample, and make some remarks on the use of bibliometrics in a real-world assessment exercise.

Keywords: Bibliometrics

# Title: Astrophysical Journal

Full Journal Title: [Astrophysical Journal](http://www.iop.org/EJ/journal/apj)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Barrie, H. (1963), Hyperbaric oxygen in resuscitation of newborn. *Astrophysical Journal*, **138** (4), 1223-1224.

Full Text: Ast J138, 1223.pdf

Notes: highly cited

? Navarro, J.F., Frenk, C.S. and White, S.D.M. (1996), The structure of cold dark matter halos. *Astrophysical Journal*, **462** (2), 563-575.

Full Text: [1996\Ast J462, 563.pdf](1996/Ast%20J462,%20563.pdf)

Abstract: We use N-body simulations to investigate the structure of dark halos in the standard cold dark matter cosmogony. Halos are excised from simulations of cosmologically representative regions and are resimulated individually at high resolution. We study objects with masses ranging from those of dwarf galaxy halos to those of rich galaxy clusters. The spherically averaged density profiles of all our halos can be fitted over two decades in radius by scaling a simple ‘‘universal’’ profile. The characteristic overdensity of a halo, or equivalently its concentration, correlates strongly with halo mass in a way that reflects the mass dependence of the epoch of halo formation. Halo profiles are approximately isothermal over a large range in radii but are significantly shallower than r(-2) near the center and steeper than r(-2) near the virial radius. Matching the observed rotation curves of disk galaxies requires disk mass-to-light ratios to increase systematically with luminosity. Further, it suggests that the halos of bright galaxies depend only weakly on galaxy luminosity and have circular velocities significantly lower than the disk rotation speed. This may explain why luminosity and dynamics are uncorrelated in observed samples of binary galaxies and of satellite/spiral systems. For galaxy clusters, our halo models are consistent both with the presence of giant arcs and with the observed structure of the intracluster medium, and they suggest a simple explanation for the disparate estimates of cluster core radii found by previous authors. Our results also highlight two shortcomings of the CDM model. CDM halos are too concentrated to be consistent with the halo parameters inferred for dwarf irregulars, and the predicted abundance of galaxy halos is larger than the observed abundance of galaxies. The first problem may imply that the core structure of dwarf galaxies was altered by the galaxy formation process, and the second problem may imply that galaxies failed to form (or remain undetected) in many dark halos.

Document Type: Article

Language: English

Author Keywords: cosmology, theory; dark matter; galaxies, halos; methods, numerical

KeyWords Plus: GALAXY FORMATION; SPIRAL GALAXIES; ROTATION CURVES; LUMINOSITY FUNCTION; ANGULAR-MOMENTUM; BARYONIC INFALL; GALACTIC HALOES; REDSHIFT SURVEY; CLUSTERS; UNIVERSE

# Title: Atención Primaria

Full Journal Title: Atencion Primaria

ISO Abbreviated Title:

JCR Abbreviated Title: Aten Primaria

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Simo Minana, J., Gaztambide Ganuza, M. and Latour Perez, J. (1999), Scientific production of Spanish professionals in primary health care (1990-1997). A bibliometric analysis from MEDLINE. *Atención Primaria*, **23** (S1), 14-28.

OBJECTIVES: To describe the scientific production of primary care (PC) Spanish professionals, during the current decade, using MEDLINE database. To identify which factors would explain the differences in the scientific production of PC professionals among Spanish autonomous communities (AACC). DESIGN: Retrospective, descriptive and analytical study. It has been designed a search strategy that will be used to retrieve this production from 1990 to 1997. MATERIAL: 1014 documents published in 44 journals during the analysed period. MEASUREMENTS: Chronological evolution, authors, institutional addresses, geographic distribution, journals and thematic areas of this scientific production were analysed. The scientific production of any AACC was studied according to its socio-economic and human resources data. By uni and multivariant analysis we studied if the differences in PC professional’s scientific production among the AACC are explained by socio-economic variables, available human resources and the degree of implementation of the new PC model in any AACC. MAIN RESULTS: During the studied period, it was detected from MEDLINE an increase in the scientific production of the spanish PC professionals, either in articles published by Atencion Primaria journal (73.7%), as in other Spanish journals (22.6%) and non-Spanish (3.7%) journals. In 71.9% of the documents the first author comes from a primary care centre. The main thematic areas treated in the articles are family practice and primary care topics, but a quarter of them tackled clinical topics. The only variable that explained the differences in the scientific production of these professionals among AACC was the bigger or lower increment of people covered by the new PC model in any AACC during the analysed period. This variable only explained 20% of the variability. The level of provincial income was significantly and inversely correlated with its scientific production. CONCLUSIONS: It can be set the suitability of MEDLINE for bibliometric studies of the scientific production of the spanish PC professionals. In global terms it has been detected an increment of this production. The degree of implementation of the new PC model in any AACC, has partially explained the differences in the scientific production of their PC professionals.

? Bellon Saameno, J.A. and Martinez Canabate, T. (2001), Research into communication and health. A Spanish and international perspective through bibliometric analysis. *Atención Primaria*, **27** (7), 452-458.

Abstract: OBJECTIVES: 1. To find the scientific output on communication and health both in Spain and internationally. 2. To compare the two outputs according to the type of articles published and the design of the research. DESIGN: Descriptive and bibliometric study. MATERIAL: The data bases MEDLINE (1995-2000) and IME (1990-2000) and the books summarising papers from semFYC Congresses (1995-2000) were used. MEASUREMENTS: The number of articles on MEDLINE published and indexed with the description <<physician-patient relationships>>, plus a series of subject describers that could be included under the heading <<communication and health>>, were counted. On the IME and in the semFYC congress summaries the describers <<communication, clinical interview, doctor-patient relationship, doctor-sick person communication and doctor-patient communication>> were used. The articles indexed on MEDLINE-IME were compared for their classification as original articles, clinical practice guidelines, review, editorial or letter to the editor. Original articles were classified in randomised and non-randomised trials, meta-analysis and observation studies. MAIN RESULTS: 6766 articles were found on MEDLINE, 42 on the IME (0.046% of the total indexed) and 34 summaries from semFYC congresses (1.47% of the total). Among the most commonly studied questions were found patients’ information and education, professional stress and psychological interviews; among the least studied were difficult and aggressive patients, negotiation and people accompanying patients. The original articles on MEDLINE and IME were 70% and 37%; and review articles, 11% and 44%. 1.4% of MEDLINE articles were randomised trials; and 0.08%, meta-analysis. CONCLUSIONS: Communication and health research is a young field that still requires descriptive studies. There is little scientific output in this area in Spain, with few original papers and too many reviews.

Keywords: Communication, Doctor-Patient Relationship, Bibliometric Study, MEDLINE, IME

? Zurro, A.M., Badia, J.G., Villa, J.J. and Martinez, C.B. (2008), *Atencion Primaria* in the science citation index expanded. *Atención Primaria*, **40** (6), 275-276.

Keywords: Citation, Index, Jun, Science, Science Citation Index

? Ortiz, Z.H. and Mendez, A.L. (2010), Efficacy of oral/buccal insulin in the treatment of diabetes mellitus. *Atención Primaria*, **42** (6), 316-321.

Abstract: Objective: To evaluate the efficacy and safety of administering oral/buccal insulin. Design: Systematic review. Data sources: Reference databases, MEDLINE, EMBASE, Scopus, Current Contents, Web of Science, and Cochrane Library, European Drugs Agency, Food and Drug Administration, International Network of Technological Evaluation Agencies, European Network for New and Emerging Technologies (Euro Scan), and gravel research registers. Selection of the studies: Two clinical trials were found. Those studies that did not compare oral/buccal insulin with the standard treatment with injected insulin in terms of clinical parameters in a population with diabetes were excluded. Extraction of data: Critical reading according to the method proposed by the CASPe program and the Jadad scale. Results: Buccal insulin produced a greater and earlier reduction in post-prandial blood glucose at 30 min in the intervention group compared to the control group (decrease of 55 mg/dl) and a higher and more rapid peak blood insulin (98 compared to 65 mu U/mL). The postprandial levels with oral insulin were similar to those obtained with injected insulin, and had a higher maximum insulin concentration (110+/-130 vs. 96.3+/-69.7 mu U/mL). Conclusions: Oral/buccal insulin gives, at least, results similar to the standard treatment. However, the studies had methodological problems of internal and external validity. Studies of longer duration are required to evaluate the long-term efficacy and safety. (C) 2008 Elsevier Espana, S.L. All rights reserved.

Keywords: Administration, Blood, Buccal Insulin, Clinical Trials, Cochrane, Control, Critical, Databases, Diabetes, Diabetes Mellitus, Drugs, Efficacy, EMBASE, Evaluation, Extraction, Insulin, Intervention, Medline, Oral Insulin, Research, Review, Safety, Science, Scopus, Systematic, Systematic Review, Treatment, Validity, Web of Science

? Cuixart, C.B. and Pelaez, I.M. (2010), Primary prevention of cardiovascular disease with aspirin: what do the guidelines say? *Atencion Primaria*, **42** (9), 470-481.

Abstract: Objective: To review the guideline recommendations on aspirin use in primary prevention of cardiovascular diseases. Design: Systematic review. The search was made by condition, treatment and type of prevention. Data sources: Science Citation Index, SCOPUS, PubMed, Spanish Ministry of Health, World Health Organisation, web sites of national and international scientific societies. Data extraction: Two investigators independently reviewed all the guidelines. Specific topics assessed: a) use of antiplatelet treatment in primary prevention b) identification of target population c) identification of recommended dosage, d) identification of criteria of aspirin use, e) publications in English and/or Spanish, f) dissemination at national (Spain) or international level. Results: Nine guidelines on primary prevention and 5 guidelines on diabetes were reviewed. Most of them recommended low dose aspirin ranging between 75 mg and 325 mg per day. All the guidelines recommend a specifc level of coronary risk to define the target population to be treated, showing high variability in risk tables used and in the level of risk which should be used to recommend treatment. The diabetes guidelines do not define any Level of risk. Three guidelines recommend the use of aspirin when blood pressure is well controlled. Conclusions: There is high variability among guidelines in terms of the level of risk from which patients should be treated, and also in dosages. Most of the guidelines recommend the use aspirin in diabetics, although some discrepancies exist among international panels, and even in different documents of the same scientific society (C) 2009 Elsevier Espana, S.L. All rights reserved.

Keywords: Aspirin, Association, Cardiovascular Diseases, Citation, Controlled-Trial, Coronary, Diabetes Mellitus, European Guidelines, Events, Metaanalysis, Primary Prevention, Publications, Pubmed, Risk Profile, Science Citation Index, Scopus, Society, Statement, Task-Force

# Title: Atherosclerosis

Full Journal Title: Atherosclerosis

ISO Abbreviated Title: Atherosclerosis

JCR Abbreviated Title: Atherosclerosis

ISSN: 0021-9150

Issues/Year: 12

Journal Country/Territory: United States

Language: Multi-Language

Publisher: Elsevier Sci Ireland Ltd

Publisher Address: Customer Relations Manager, Bay 15, Shannon Industrial Estate Co, Clare, IR

Subject Categories:

Peripheral Vascular Disease: Impact Factor

Tseng, C.H., Chong, C.K., Chen, C.J. and Tai, T.Y. (1996), Dose-response relationship between peripheral vascular disease and ingested inorganic arsenic among residents in blackfoot disease endemic villages in Taiwan. *Atherosclerosis*, **120** (1-2), 125-133.

Full Text: [A\Atherosclerosis120, 125.pdf](A/Atherosclerosis120,%20125.pdf)

Abstract: The purpose of this study was to examine the correlation between previous arsenic exposure and peripheral vascular disease after stopping consumption of high-arsenic artesian, well water for more than two decades in blackfoot disease endemic villages in Taiwan. A total of 582 adults (263 men and 319 women, aged 52.6±10.6 years) living in these villages underwent Doppler ultrasound measurement of systolic pressures on bilateral ankle (postperior tibial and dorsal pedal) and brachial arteries and estimation for long-term arsenic exposure). The diagnosis of peripheral vascular disease was based on an ankle-brachial index (the ratio between ankle and brachial systolic pressures) < 0.90 on either side. Three indices of arsenic exposure were estimated. (1) duration of living in blackfoot disease endemic villages; (2) duration of artesian well water consumption: and (3) cumulative arsenic exposure in mg/1-years based on the detailed history of residential addresses and artesian well water consumption and the arsenic concentration in artesian well water. Multiple logistic regression analysis was used to assess the association between peripheral vascular disease and arsenic exposure. A dose-response relation was observed between the prevalence of peripheral vascular disease and the long-term arsenic exposure. The odds ratios (95% confidence intervals) after adjustment for age, sex, body mass index, cigarette smoking, serum cholesterol and triglyceride levels, diabetes mellitus and hypertension were 2.77 (0.84-9.14), and 4.28 (1.26-14.54) for those who had cumulative arsenic exposure of 0.1-19.9 and greater than or equal to 20.0 mg/1-years, respectively, compared with those who were not exposed. This study suggests a close relation between long-term arsenic exposure and peripheral vascular disease in blackfoot disease endemic villages in Taiwan after stopping consumption of artesian well water.

Keywords: Blackfoot Disease, Peripheral Vascular Disease, Arsenic, Water Pollutant, Humic Substances, Prothrombin Time, Risk-Factors, Population, Invitro, Cancer, Water, Acid

? Oosterveer, D.M., Versmissen, J., Yazdanpanah, M., Hamza, T.H. and Sijbrands, E.J.G. (2009), Differences in characteristics and risk of cardiovascular disease in familial hypercholesterolemia patients with and without tendon xanthomas: A systematic review and meta-analysis. *Atherosclerosis*, **207** (2), 311-317.

Abstract: Background: Tendon xanthomas are characteristic of familial hypercholesterolemia (FH). It is not clear whether FH patients with xanthomas have higher risk of cardiovascular disease (CVD) than those without xanthomas. The clinical diagnosis of FH in patients without xanthomas, namely requires the presence of CVD in the patient or in a first-degree relative. This may have masked the association between xanthomas and CVD in a number of studies. A diagnosis of FH based on the presence of a mutation in the low-density lipoprotein receptor (LDLR) gene is free from this selection on CVD. In this systematic review and meta-analysis, we therefore compared the risk of CVD between patients heterozygous for LDLR mutation with and without xanthomas. Methods and results: We conducted a literature search with PUBMED and the Web of Science up to January 14, 2009. We selected all articles examining more than 25 human heterozygous FH patients, that provided information about xanthomas. Articles had to be written in a Western European language. A total of 22 articles suited for analyses. A genetic confirmation of FH was compulsory to correctly assess the risk of CVD with presence of xanthomas. Age, male gender, LDL-cholesterol and triglyceride level were associated with the presence of xanthomas (p < 0.05 for all). In patients with genetically confirmed FH, xanthomas were associated with a 3.20-fold higher risk of CVD (95% CI 2.12-4.82, p < 0.01). Conclusions: Xanthomas are associated with a 3 times higher risk of CVD among FH patients, suggesting that xanthomas and CVD may share etiology. (C) 2009 Elsevier Ireland Ltd. All rights reserved.

Keywords: Achilles-Tendon, Age, Articles, Atherosclerosis, Cardiovascular, Cardiovascular Disease, Clinical-Manifestations, Coronary-Artery Disease, Diagnosis, Disease, Etiology, Familial Hypercholesterolemia, Gender, Genetic, Human, Hypercholesterolemia, Information, Intima-Media Thickness, Ischemic Heart-Disease, LDL Receptor Gene, Literature, Meta-Analysis, Methods, Mutation, Phenotype, PUBMED, Review, Risk, Science, Systematic, Systematic Review, Tendon, Triglyceride, Ultrasonography, Web of Science, Xanthomas

? Ma, X.Y., Liu, J.P. and Song, Z.Y. (2011), Associations of the ATP-binding cassette transporter A1 R219K polymorphism with HDL-C level and coronary artery disease risk: A meta-analysis. *Atherosclerosis*, **215** (2), 428-434.

Abstract: Objective: Previous studies have evaluated the associations of the ATP-binding cassette transporter A1 (ABCA1) R219K polymorphism (rs2230806) with the level of high-density lipoprotein cholesterol (HDLC) and the risk of developing coronary artery disease (CAD), but results from many small, underpowered studies are conflicting. The objective of this study was to overcome the limitations of individual study and provide solid epidemiologic evidence. Methods: We conducted a systematic review and meta-analysis of available studies to clarify the associations of the ABCA1 R219K polymorphism with HDL-C level and CAD risk. Results: Through retrieving PUBMED, EMBASE, Web of Science, CBM and CNKI, we identified a total of 22 studies with 6597 cases and 15,369 controls for the association between the ABCA1 R219K polymorphism and CAD risk. The carriers of allele 219K were found to have a lower risk of CAD than the non-carriers: OR = 0.76,95% CI = 0.68-0.85, P = 3.78E-07, P(heterogeneity) = 3.59E-08; meanwhile, 18 studies from 17 papers with 12,869 subjects were included in the association between the ABCA1 R219K polymorphism and the level of HDL-C. It was suggested that the carriers of KK genotype had higher level of HDL-C than those of RR genotype: SMD = 0.19, 95% CI = 0.06-0.32, P = 0.005, P(heterogeneity) = 3.19E-09. Subgroup analyzes by ethnicity certified that the effect on HDL level was just significant in Asians. Exclusion of the outlier studies effectively removed the heterogeneity and confirmed the total results. No publication bias was detected in this meta-analysis. Conclusions: The synthesis of available evidence demonstrates that the ABCA1 R219K polymorphism is associated with a higher HDL-C level in Asians and a protective role for CAD risk both in Asians and Caucasians. (C) 2011 Elsevier Ireland Ltd. All rights reserved.

Keywords: Abca1 Gene, Atp Binding Cassette Transporter A1, Bias, Cholesterol Levels, Clinical-Trials, Common Polymorphisms, Coronary Artery Disease, Disease, Disease Risk, Ethnicity, Familial Hypercholesterolemia, Genome-Wide Association, Hdl, Hdl-C, Heart-Disease, Meta Analysis, Meta-Analysis, Methods, Myocardial-Infarction, Papers, Polymorphism, Population, Publication, Publication Bias, PUBMED, Review, Risk, Science, Systematic, Systematic Review, Tangier-Disease, Web of Science

# Title: ATLA-Alternatives to Laboratory Animals

Full Journal Title: ATLA-Alternatives to Laboratory Animals

ISO Abbreviated Title: ATLA-Altern. Lab. Anim.

JCR Abbreviated Title: ATLA-Altern Lab Anim

ISSN: 0261-1929

Issues/Year: 6

Journal Country/Territory: England

Language: English

Publisher: Frame

Publisher Address: Russell & Burch House 96-98 North Sherwood St, Nottingham NG1 4EE, Notts, England

Subject Categories:

Veterinary Sciences: Impact Factor 1.533, 13/124 (2004)

? Ungar, K. (1997), A bibliometric evaluation of the performance of ATLA. *ATLA-Alternatives to Laboratory Animals*, **25** (1), 67-69.

Abstract: Analysis of citations to and by ATLA in the years 1988, 1993, 1994 and 1995 show that the impact factor of ATLA has improved significantly over this period, as has the ranking of the journal in relevant sectors of journal publishing. The results further suggest that in vitro toxicology is evolving into a separate discipline and that ATLA is increasingly being seen as one of the key journals for this discipline. However, ATLA’s coverage extends beyond in vitro toxicology. It is a vital and unique resource for the promotion of the Three Rs in fields where no other influential specialised journals on alternatives are currently being published.

Keywords: Bibliometric, Citations, Evaluation, Impact, Journal Publishing, Journals, Publishing

? Bottrill, K. (2000), Bibliometric analysis of the performance of ATLA: An update. *Atla-Alternatives to Laboratory Animals*, **28** (6), 855-856.

# Title: Atmospheric Environment

Full Journal Title: [Atmospheric Environment](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6055&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=3b7a1a45c8e66f7b6459d5765bff3250)

ISO Abbreviated Title: Atmos. Environ.

JCR Abbreviated Title: Atmos Environ

ISSN: 1352-2310

Issues/Year: 24

Journal Country/Territory: England

Language: English

Publisher: Pergamon-Elsevier Science Ltd

Publisher Address: The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, England

Subject Categories:

Environmental Sciences: Impact Factor 2.630, 16/144 (2006)

Meteorology & Atmospheric Sciences: Impact Factor 2.630, 9/48 (2006)

Rammon, D.A. and Peirce, J.J. (1999), Biogenic nitric oxide from wastewater land application. *Atmospheric Environment*, **33** (13), 2115-2121.

Full Text: [A\Atm Env33, 2115.pdf](A/Atm%20Env33,%202115.pdf)

Abstract: The importance of municipal wastewater land application to nitric oxide production and transport in soil was studied through the formulation and conduct of a comprehensive laboratory testing protocol. Nitric oxide (NO) is a precursor in the formation of tropospheric ozone which can directly impact public health and the environment. It is the uncertainty in the NO budget, and its relation to O3, that motivates the need for measurements and modeling of NO flux from soils. Wastewater-amended soil is potentially one important component of that budget. NO emissions reported here were measured from: a well-characterized unamended soil, water-amended soil, and wastewater-amended soil in the laboratory in a dynamic test chamber. Laboratory results indicate that NO emissions from the selected sandy loam soil ranged from 0.3 to 0.4 ng N m-2s-1 per cm2 of unamended soil, while water-amended soil emissions ranged from 0.4 to 0.7 ng N m-2s-1 per cm2. NO flux from wastewater-amended soil ranged from 1.0 to 1.2 ng N m-2s-1 per cm2 of applied soil. (C) 1999 Elsevier Science Ltd. All rights reserved.

Keywords: Nitric Oxide, Land Application, Ozone Precursor, Waste-Amended Soil, Gaseous Emissions, Nitrous-Oxide, United-States, Emissions, Soil, Field

Grøntoft, T. (2004), Measurements and modelling of the ozone deposition velocity to concrete tiles, including the effect of diffusion. *Atmospheric Environment*, **38** (1), 49-58.

Full Text: [A\Atm Env38, 49.pdf](A/Atm%20Env38,%2049.pdf)

Abstract: A ranee of models were fitted to the experimental time-dependent curves for the deposition velocity of O3 to concrete floor tile samples. The models included modified Langmuir isotherms assuming adsorption of O3 on the material surfaces and models assuming direct reaction on and diffusion of O3 into the material from the air. The best fit was obtained with a simple two-parameter model assuming direct reaction of O3 with adsorbed surface water and direct diffusion of O3 into the material from the air. However, models assuming an additional second-order reaction of O3 with an adsorbed surface species with a given start mass gave improved curve fit in the first 500 min. Applying the best model to experimental data obtained over the whole air humidity range resulted in markedly lower equilibrium deposition velocities than those measured after 48 h. The modelling gave a deposition velocity minimum in the 50-70% relative air humidity range in agreement with observations. The deposition velocity minimum could be explained with a reduced constant for the reaction of O3 with water or OH- ions on the surface. (C) 2003 Elsevier Ltd. All rights reserved.

Keywords: Ozone Deposition Velocity, Time Dependence, Modelling, Surface Reaction, Diffusion, Concrete, Surfaces

? Metts, T.A., Batterman, S.A., Fernandes, G.I. and Kallioko, P. (2005), Ozone removal by diesel particulate matter. *Atmospheric Environment*, **39** (18), 3343-3354.

Full Text: [2005\Atm Env39, 3343.pdf](2005/Atm%20Env39,%203343.pdf)

Abstract: The most significant removal mechanisms for tropospheric ozone (O3) include dry deposition, photolysis, and photochemical reactions. This study examines another mechanism potentially important in urban areas: sorption and removal on diesel particulate matter (DPM). Tests were performed to determine O3 breakthrough and the amount of O3 removed by the DPM generated by a heavy-duty diesel engine. Teflon filters loaded with 0.7–1.8 mg of DPM were exposed to a test atmosphere of humidified and ozonated air designed to represent realistic ambient air conditions. In addition, soot samples with the organic fraction removed were tested to determine whether the organic or elemental fraction contributed to O3 removal. For comparison, activated carbon (AC) samples were also tested. The DPM-loaded filters removed 5.6±1.8 wt% of O3. Considerably more ozone, 31±4 wt %, was removed by the DPM after removal of its soluble organic fraction. Removal capacities of DPM were small relative to AC, which removed >38±3 wt% of O3. of the Lagergren pseudo-first-order, pseudo-second-order, Elovich, and Ritchie chemisorption models tested, the Ritchie model provided the best fit to the breakthrough data. Preliminary estimates drawn from laboratory results suggest that diesel soot present at typical urban levels will remove only a small portion of O3 from urban or tropospheric air. In air cleaning applications, DPM-loaded filters are also expected to remove only a small portion of indoor O3.

Keywords: Air Pollution, Diesel, Filter, Ozone, Particulate Matter, Soot

? Brimblecombe, P. and Grossi, C.M. (2009), The bibliometrics of *Atmospheric Environment*. *Atmospheric Environment*, **43** (1), 9-12.

Full Text: [2009\Atm Env43, 9.pdf](2009/Atm%20Env43,%209.pdf)

Abstract: Bibliometric analysis is an important tool in the management of a journal. SCOPUS output is used to assess the increase in the quantity of material in Atmospheric Environment and stylistic changes in the way authors choose words and punctuation in titles and assemble their reference lists. Citation analysis is used to consider the impact factor of the journal, but perhaps more importantly the way in which it reflects the importance authors give to papers published in Atmospheric Environment. The impact factor of Atmospheric Environment (2.549 for 2007) from the Journal Citation Reports suggests it performs well within the atmospheric sciences, but it conceals the long term value authors place on papers appearing in the journal. Reference lists show that a fifth come through citing papers more than a decade old.

Keywords: Analysis, Authors, Bibliometric, Bibliometric Analysis, Bibliometrics, Changes, Citation, Citation Analysis, Citation Half Life, Content Analysis, Environment, Impact, Impact Factor, Journal, Long Term, Long-Term, Management, Papers, Reference, Reference Lists, Rights, Sciences, Scopus, Term, Tool

# Title: Atmospheric Environment

Incorporating [Atmospheric Environment. Part A. General Topics](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=12896&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=3281709&md5=8961c28154ece4dd3e3eccc476528fd6) and [Atmospheric Environment. Part B. Urban Atmosphere](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=12897&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=3281709&md5=96ea1ddbf9d7b50541ef2271f4d8af59)

Formerly part of [Atmospheric Environment (1967)](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=12895&_auth=y&_acct=C000053193&_version=1&_urlVersion=0&_userid=1495547&md5=0588efdb2bb9dbccb58f99497b0ce178)

Full Journal Title: [Atmospheric Environment](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6055&_auth=y&_acct=C000011279&_version=1&_urlVersion=0&_userid=3281709&md5=a28c157924a0dd856257916848011acc)

ISO Abbreviated Title: Atmos. Environ.

JCR Abbreviated Title: Atmos Environ

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

Impact Factor

Germani, M.S. and Zoller, W.H. (1994), Solubilities of elements on in-stack suspended particles from a municipal incinerator. *Atmospheric Environment*, **28** (8), 1393-1400.

Full Text: Atm Env28, 1393

Abstract: Previous studies have shown that small particles emitted from waste incinerators are enriched in many elements. e.g. Na, Cl, Br, Cu, Zn, As, Ag, Cd, In, Sn, Sb, W and Pb. Experiments were done to determine the water solubility of elements on in-stack cascade-impactor and whole-filter samples collected at a municipal incinerator. Na, Cs. K, Zn, Cl, Br, Cd and Pb were all very soluble. Solubilities range from 63% for Zn to 100% for Cl, and increase with decreasing particle size. Other elements associated with small particles and those on larger particles, i.e. Cu, As. In, Sn, Sb, W, Au, Al, Ti, Sc, La. V, Cr. 17 e, Mn, Co and Se are mostly insoluble (< 20%). Calcium was very soluble (73%) and the solubility of Ag varied from < 2 to 57%. It was determined, using scanning electron microscopy, that small particles are composed of a rather homogeneous mixture of chloride salts of the major elements Na, K, Zn and Pb.

Keywords: Incinerator, Particles, Solubility, Heavy Metals, Size Distributions, Refuse Incinerator, Mass

Fang, S.H. and Chen, H.W. (1996), Air quality and pollution control in Taiwan. *Atmospheric Environment*, **30** (5), 735-741.

Full Text: [A\Atm Env30, 735.pdf](A/Atm%20Env30,%20735.pdf)

Abstract: Due to limited land and great emphasis on economic growth in the past, Taiwan has an extremely heavy environmental burden. Population density, factory density, as well as densities of motor vehicles are several times higher than those in the United States and Japan. According to the statistics of 1991, the Pollutant Standards Index (PSI) fell mostly in the “moderate” category, i.e., in the range of 50-100. There were 16.25% of the monitored days with PSI above 100 and 0.51% with PSI beyond 200. Suspended particulates were the major pollutant responsible for PSI above 100, followed by carbon monoxide, ozone and sulfur dioxide. The measures adopted to control air pollution can be divided into four categories, namely law and regulations, control measures on stationary sources, mobile sources and construction projects. The latest amended Air Pollution Control Act was promulgated on 1 February 1992. Several major revisions were introduced to make the amended Act much more stringent than the 1982 amendment, especially on the offenses likely to endanger public health and welfare. In regard to stationary sources, a permit system was enacted to regulate the establishment and alteration of stationary sources. Designated stationary sources are required to be equipped with automatic monitoring facilities. An inspection and enforcement program have expanded to cover more than 10,000 factories. Major control measures for motor vehicles include introducing stringent emission standards for gasoline-fueled vehicles and diesel cars, setting up ratification and approval program for new vehicle model, promoting the inspection/maintenance program on in-used motorcycles and encouraging the use of unleaded and low sulfur fuels. In order to control the pollution caused by construction work, constructors are required to use low-pollution machinery and engineering methods and incorporate pollution prevention into the construction budget.

Keywords: Air Pollution Control Act, Total Emission, Air Quality Monitoring, Stationary Sources, Mobile Sources

Casado, H., Encinas, D. and Lacaux, J.P. (1996), Relationship between the atmospheric particulate fraction and the ionic content of precipitation in an area under influence of a waste incinerator located in the Basque Country (Spain). *Atmospheric Environment*, **30** (10-11), 1537-1542.

Full Text: [A\Atm Env30, 1537.pdf](A/Atm%20Env30,%201537.pdf)

Abstract: During the period between April 1988 and April 1991, the relationship between the ionic content of the atmospheric particulate fraction and the rainwater collected at Olaeta, a cattle raising and forested area in the Basque Country, has been studied. The site is affected by the emissions from a waste incinerator located 11 km away in a north-easterly direction. SO42-and NH4+ ions are the most important species in the particulate fraction with 4.6 µg m-3 for each of them. The precipitation is characterized by very high concentrations of Cl-ion with 173.4 µeq l-1 (Cl-/Na+ ratio = 3), the next important ions are NH4+, Ca2+ and SO42-with 95.9, 91 and 69.2 µeq l-1 respectively. The average H+ concentration is 47.9 µeg l-1 (pH = 4.3). The contributions of both soluble particulate fraction and gases to the ionic concentrations recorded in the precipitation differ widely from one type of ion to another, the contribution of HCl gas being the most important one. Approximately, 95% of Cl-ion present in the rainwater come from the gaseous phase. The contribution of the particulate fraction tb the rainwater concentrations varies between 100% (for SO42-and NH4+ ions) and 22% (for Ca2+ ion). The scavenging ratio for Cl-ion (W = 40,000) is very high as it is mainly in the gaseous phase in the atmosphere. The scavenging ratios of NH4+ and SO42-ions are the lowest (W = 600 and 1000 respectively), probably because these species are in the fine particle range of the aerosol.

Keywords: Scavenging Ratios, Aerosol Composition, Rainwater Composition, Denuder-Filter Technique, Wet-Only Collector, Scavenging Ratios, Chemical Characterization, Aerosol, Deposition, Chemistry, Michigan, Rain

Wu, H.W.Y. and Chan, L.Y. (1997), Comparative study of air quality surveillance networks in Hong Kong. *Atmospheric Environment*, **31**, 935-945.

Full Text: [A\Atm Env31, 935.pdf](A/Atm%20Env31,%20935.pdf)

Abstract: Spatial distribution and temporal variation of 24 h SO2 concentrations are examined to compare the three surveillance networks in Hong Kong, namely Environmental Protection Department, Hong Kong Electric Co. Ltd. and China Light and Power Co. Ltd. Factors affecting the space-time variability of the air quality data were identified and taken into consideration in assessing the monitoring network design. Spatial correlation analysis was computed for the intra-network and inter-network station pairs. Besides synoptic meteorological influence, spatial correlation was found to depend not simply on distance factor but on a combination of controls including local emission characteristics. The findings could be applied to future rationalization of the monitoring networks. Limitation on the Air Pollution Index system in Hong Kong is reviewed, noting the inadequacy of interpolation from the existing EPD network stations.

Nichol, J. (1997), Bioclimatic impacts of the 1994 smoke haze event in southeast Asia. *Atmospheric Environment*, **31** (8), 1209-1219.

Full Text: [A\Atm Env31, 1209.pdf](A/Atm%20Env31,%201209.pdf)

Abstract: A smoke haze event of unprecedented magnitude which occurred in southeast Asia 1994 is statistically evaluated for its impact on regional and global climate using climatic and air quality data from Singapore and by comparison with the better-known smoke pollution episode resulting from the Kuwait oil fires of 1991.

Several local climatic parameters were found to be closely related to air quality on a daily basis. Mean data for the haze period in 1994 appeared to differ significantly From the long-term means for the same period in previous years, with the exception of daily mean air temperature and mean Global Solar Radiation (GSR). The latter is in spite of the inverse relationship between daily GSR and pollution levels. An ENSO-related influence on regional climate (masking some of the perceived regional impacts of the haze) is invoked to explain the apparent contradiction.

The significance of the smoke haze at global scale is considered for its impact on the global carbon budget, especially due to the combustion of peat in the coastal lowlands of Sumatra and Kalimantan. The scarcity of available ecological data is regretted and recommendations are made for future cooperation over monitoring and research between scientists and government bodies from the countries in the southeast Asian region.

# Title: Atmospheric Environment Part A-General Topics

Publication History: Formerly part of [Atmospheric Environment (1967)](http://www.sciencedirect.com/science/journal/00046981)

Incorporated into [Atmospheric Environment](http://www.sciencedirect.com/science/journal/13522310)

Full Journal Title: [Atmospheric Environment Part A-General Topics](http://www.sciencedirect.com/science/journal/09601686); [Atmospheric Environment Part A-General Topics](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=12896&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=9ace6386594c2873d1f87489340cc9d2)

ISO Abbreviated Title: Atmos. Environ. A-Gen.

JCR Abbreviated Title: Atmos Environ A-Gen

ISSN: 0004-6981

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Pergamon-Elsevier Science Ltd

Publisher Address:

Subject Categories:

Impact Factor

Kauppinen, E.I. and Pakkanen, T.A. (1990), Mass and trace element size distributions of aerosols emitted by a hospital refuse incinerator. *Atmospheric Environment Part A-General Topics*, **24** (2), 423-429.

Full Text: [A\Atm Env Par A24, 423.pdf](A/Atm%20Env%20Par%20A24,%20423.pdf)

Abstract: Mass and elemental size distributions of hospital refuse incineration aerosols were measured in the aerodynamic particle size range 0.02–17 μm with an in-stack compressible flow, low pressure impactor. Oil was used as a supplementary fuel in the refuse combustion process and flue gases were cleaned with a cyclone. Mass size distributions were bimodal. The geometric aerodynamic mean diameter of the fine mode varied between 0.1 and 0.2 μm and the corresponding coarse mode mean between 6 and 10 μm. Mg, Al, Cl, Ti and Fe were found only in coarse mode particles. Elemental size distributions of Na, K, Zn, Cd, Pb and S were bimodal. Over 90% of the particle phase of S, 20–80% of Zn, 62–77% of Cd and 7–74% of Pb, respectively, were found in the fine mode particles. This existence of the fine mode peak in the size distributions of Na, K, Zn, Cd, Pb and S indicates that at least part of these elements vaporizes during the refuse incineration process.

Keywords: Aerosols, Hospital Refuse Incineration, Size Distributions, Heavy Metals, Low Pressure Impactors

Notes: highly cited

? Pankow, J.F. and Bidleman, T.F. (1992), Interdependence of the slopes and intercepts from log-log correlations of measured gas particle partitioning and vapor-pressure. I. Theory and analysis of available data. *Atmospheric Environment Part A-General Topics*, **26** (6), 1071-1080.

Full Text: [1992\Atm Env Par A26, 1071.pdf](1992/Atm%20Env%20Par%20A26,%201071.pdf)

Abstract: Gas-particle partitioning is examined using a partitioning constant K(p) = (F/TSP)/A, where F (ng m-3) and A (ng m-3) are the particulate-associated and gas-phase concentrations, respectively, and TSP is the total suspended particulate matter level (μg m-3). At a given temperature and for a given sample of particulate matter, compound-dependent values of K(p) tend to be correlated with the sub-cooled liquid vapor pressure (p(L)0, torr) according to log K(p) = m(r)log p(L)0 + b(r). Theory predicts that b(r) values should be somewhat similar, and that m(r) values should be near -1. This is supported by field and laboratory work. However, there is still noticeable variability in reported m(r) and b(r) values, even when obtained by the same researchers sampling in the same location. Three possible thermodynamic sources of variability include variability in the compound-to-compound differences in the thermodynamics of adsorption, event-to-event variability in the specific surface area of the aerosol and event-to-event variability in the ambient temperature. Non-thermodynamic sources of variability include sorption of gaseous analytes to the filters used in differentiating between F and A, the presence of non-exchangeable components in the measured F values, within-event adsorption/desorption kinetics, within-event changes in contaminant levels, and within-event changes in temperature. Each of these sources of variability operate in their own way to cause variability in m(r) and b(r). In general, one can expect there to be a correlation in the observed m(r) and b(r) of the form b(r) = m(s)m(r) + b(s). For the study of Yamasaki et al. (1982, Envir. Sci. Technol. 16, 189-194), one obtains m(s) = 5.77 and b(s) = -2.18, with r2 = 0.91. In the presence of such a correlation, one can expect that all log(F/TSP)/A vs log p(L)0 plots will tend to intersect at the same (x, y) point given by (-m(s), b(s)). Existing field and laboratory data show this tendency.

Keywords: Absorption, Adsorption, Aerosol, Air, Atmosphere, Atmospheric Particulate Material, Distributions, Effects of Vapor Pressure on Gas Particle Partitioning, Gas Particle Distribution, Gas Particle Partitioning, Kinetics, Organic Compounds, Organochlorines, Particulate Material, Partitioning, Pesticides, Polychlorinated Biphenyls (PCBS), Polychlorinated Dibenzodioxins (PCDDS), Polychlorinated Dibenzofurans (PCDFS), Polycyclic Aromatic Hydrocarbons (PAHS), Polycyclic Aromatic-Hydrocarbons, Semivolatile Organic-Compounds, Sorption, Surface Area, Thermodynamics, TSP, Urban Particulate Material, Volatilization

Mosher, B.W., Winkler, P. and Jaffrezo, J.L. (1993), Seasonal aerosol chemistry at dye-3, Greenland. *Atmospheric Environment Part A-General Topics*, **27** (17-18), 2761-2772.

Full Text: [A\Atm Env Par A274, 2761.pdf](A/Atm%20Env%20Par%20A274,%202761.pdf)

Abstract: Aerosol trace element concentrations spanning an eleven month period at Dye 3, Greenland are presented. Sea salt input into the lower atmosphere of the ice sheet occurs predominantly in the winter months of December-February. These aerosols are the product of vigorous Arctic winter storms. Long range transport of crustal material from lower latitude arid regions to the Greenland Ice Sheet takes place predominantly during the spring. The onset of Arctic sunrise and associated weakening of the surface and upper level inversion over the ice sheet appear to be important factors resulting in higher crustal aerosol concentrations in the lower levels of the Greenland atmosphere during the month of April. A strong pulse of crustal aerosol (260 ng Al scm-1) was observed at Dye 3 on 14-15 April 1989. Meteorological evidence suggests that strong winds and deep convective activity injected dust high into the atmosphere over the Sahara desert region. This airmass then appears to have passed northward over western Europe where it mixed with anthropogenic aerosols and arrived in the Dye 3 region some 4-6 d hence. Elevated concentrations of anthropogenic aerosol species were also observed at the surface during the months of April and May. Long range transport of these aerosols appears to be important during the Arctic winter and spring, while enhanced downward mixing due to a weakening inversion results in elevated concentrations at the surface during April and May. An increase in scavenging due to persistent Arctic stratus and the northward migration of the Polar Front in the spring results in very low anthropogenic aerosol concentrations during the summer months. Particulate aerosol iodine and bromine concentrations also peak during the month of April at Dye 3. It has been suggested that this spring particulate halogen peak, which is observed throughout the Arctic, may be the result of photochemical aerosol production from biogenic organohalogen species. Regional meteorological phenomena as well as seasonal variations in source strength and long range transport appear to be important factors influencing aerosol concentrations in the surface atmosphere of the Greenland Ice Sheet.

Keywords: Greenland, Arctic Aerosol Chemistry, Seasonal Aerosol Composition, Trace Elements, Aerosol Sources, Ice-Core, Ozone Destruction, Arctic Aerosol, Air Chemistry, Polar Sunrise, Saharan Dust, Transport, Bromine, Components, Atmosphere

# Title: Atmospheric Environment Part B-Urban Atmosphere

(Atmos. Environ. B-Urb.)

Incorporated into [Atmospheric Environment](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=6055&_auth=y&_acct=C000053806&_version=1&_urlVersion=0&_userid=3254438&md5=8dbf6eb213c2e38ed54a227dd7313c64)

Formerly part of [Atmospheric Environment (1967)](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=12895&_auth=y&_acct=C000053806&_version=1&_urlVersion=0&_userid=3254438&md5=cdf4f11a892ac875528f9294afaa038c)

Full Journal Title: [Atmospheric Environment Part B-Urban Atmosphere](http://www.sciencedirect.com/science?_ob=JournalURL&_cdi=12897&_auth=y&_acct=C000047720&_version=1&_urlVersion=0&_userid=2007471&md5=7b9fe82bde12b00a412de570dccc763c)

ISO Abbreviated Title: Atmos. Environ. B-Urb.

JCR Abbreviated Title: Atmos Environ B-Urb

ISSN: 0957-1272

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Pergamon-Elsevier Science Ltd

Publisher Address:

Subject Categories:

Impact Factor

Mamane, Y. (1990), Estimate of municipal refuse incinerator contribution to philadelphia aerosol using single-particle analysis. II. Ambient measurements. *Atmospheric Environment Part B-Urban Atmosphere*, **24** (1), 127-135.

Full Text: [A\Atm Env Par B24, 127.pdf](A/Atm%20Env%20Par%20B24,%20127.pdf)

Abstract: In a study to differentiate between municipal refuse incinerator particles and other particles in urban air, samples were collected on Teflon and nuclepore filters in dichotomous samplers and analyzed by scanning electron microscopy (SEM) and energy dispersive X-ray spectrometry. The samples included ambient aerosol from two sites in the Philadelphia area, representing different meteorological conditions. The same samples were previously analyzed by bulk techniques including X-ray fluorescence and instrumental neutron activation analysis.

Particles emitted from incinerators rich in Zn, Cl and K were clearly identified in ambient samples, both in the coarse (2.5–10 μm) and fine aerosol fraction (<2.5 μm). The contribution of incinerators emission was from zero up to 10% of the coarse aerosol mass. Similar particles that contained also Zn and Cl were observed, but they did not originate in refuse incineration. Minerals and biologicals were the most dominant components of the coarse aerosol fraction; sulfates dominate the fine fraction. One of the case studies provided evidence for the missing chlorine in the fine fraction. Apparently fine chlorides emitted from incinerators reacted with ambient sulfates to form mixed sulfates of Zn and K. Good agreement was obtained between the measured coarse aerosol mass concentration and the one estimated by electron microscopy.

Keywords: Municipal Refuse Incinerator, Electron Microscopy, Individual Particle, Zinc, Chloride, Potassium, Coarse and Fine Aerosols, Minerals, Biologicals

# Title: Atmospheric Research

Full Journal Title: [Atmospheric Research](http://www.sciencedirect.com/science/journal/01698095)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Palencia, C., Castro, A., Giaiotti, D., Stel, F., Vinet, F. and Fraile, R. (2009), Hailpad-based research: A bibliometric review. *Atmospheric Research*, **93** (1-3), 664-670.

Full Text: [2009\Atm Res93, 664.pdf](2009/Atm%20Res93,%20664.pdf)

Abstract: This paper is an overview of hailpad research from its origin until today using as a search criterion the bibliographic references on the subject in the Web of Science database (ISI). The search was carried out on 1st September 2008. Among the more than 3.10(7) scientific documents included in the Science Citation Index Expanded (SCI-EXPANDED) from 1945 to the present, the search engine identified 41 containing the word “hailpad\*” (the asterisk is a wildcard for any letter or group of letters). The results have been analyzed according to various criteria: countries with hailpad networks or studies on hailpads; date of the first article; evolution of the number of articles per decade; concepts studied and research lines followed in each article; and finally, a bibliometric analysis of the journals where these articles have been published. It was found that 70% of the articles on hailpads were published in 2 journals: Journal of Applied Meteorology and Atmospheric Research. These two journals also concentrate most of the citations. The number of articles on hailpads and the documents that cite them have grown steadily, and it is expected to grow still further in the present decade if we take into account the trends found. (C) 2008 Elsevier B.V. All rights reserved.

Keywords: Bibliometric Analysis, Bibliometric Review, Calibration, Citation, Hail Research, Hailpad, Research, Web of Science

? Rossa, A., Liechti, K., Zappa, M., Bruen, M., Germann, U., Haase, G., Keil, C. and Krahe, P. (2011), The COST 731 Action: A review on uncertainty propagation in advanced hydro-meteorological forecast systems. *Atmospheric Research*, **100** (2-3), 150-167.

Full Text: [2011\Atm Res100, 150.pdf](2011/Atm%20Res100,%20150.pdf)

Abstract: Quantifying uncertainty in flood forecasting is a difficult task, given the multiple and strongly nonlinear model components involved in such a system. Much effort has been and is being invested in the quest of dealing with uncertain precipitation observations and forecasts and the propagation of such uncertainties through hydrological and hydraulic models predicting river discharges and risk for inundation. The COST 731 Action is one of these and constitutes a European initiative which deals with the quantification of forecast uncertainty in hydro-meteorological forecast systems. COST 731 addresses three major lines of development: (1) combining meteorological and hydrological models to form a forecast chain, (2) propagating uncertainty information through this chain and make it available to end users in a suitable form, (3) advancing high-resolution numerical weather prediction precipitation forecasts by using non-conventional observations from, for instance, radar to determine details in the initial conditions on scales smaller than what can be resolved by conventional observing systems. Recognizing the interdisciplinarity of the challenge COST 731 has organized its work forming Working Groups at the interfaces between the different scientific disciplines involved, i.e. between observation and atmospheric (and hydrological) modelling (WG-1), between atmospheric and hydrologic modelling (WG-2) and between hydrologic modelling and end-users (WG-3). This paper summarizes the COST 731 activities and its context, provides a review of the recent progress made in dealing with uncertainties in flood forecasting, and sets the scene for the papers of this Thematic Issue. In particular, a bibliometric analysis highlights the strong recent increase in addressing the uncertainty analysis in flood forecasting from an integrated perspective. Such a perspective necessarily involves the area of meteorology, hydrology, and decision making in order to take operational advantage of the scientific progress, an aspect in which COST 731 is successfully contributing to furthering the flood damage mitigation capabilities in Europe. (C) 2010 Elsevier B.V. All rights reserved.

Keywords: Bibliometric, Bibliometric Analysis, Cost, Data Assimilation, Decision Making, Decision-Making, Development, Eps, Europe, Flash Floods, Flood Forecasting, Flood Risk-Management, Hydrological Aspects, Interdisciplinarity, Map D-Phase, Mesoscale Alpine Program, Nwp, Papers, Probabilistic Prediction, Radar, Radar Data, Range Weather Forecasts, Real-Time Demonstration, Review, Uncertainty

# Title: Atomic Spectroscopy

Full Journal Title: Atomic Spectroscopy

ISO Abbreviated Title: Atom. Spectrosc.

JCR Abbreviated Title: Atom Spectrosc

ISSN: 0195-5373

Issues/Year: 6

Journal Country/Territory: United States

Language: English

Publisher: Perkin-Elmer Corp

Publisher Address: 761 Main Ave, Norwalk, CT 06859-0105

Subject Categories:

Spectroscopy: Impact Factor

? Bosnak, C.P. and Grosser, Z.A. (1996), The analysis of drinking water and bottled water by flame AA and GFAA. *Atomic Spectroscopy*, **17** (6), 218-224.

Abstract: Drinking water provides a significant potential exposure to environmental contaminants. Particularly for infants, whose formula may be prepared with tap water or bottled water, it is important for the water to be free from harmful contaminants. Other elements may affect odor or appearance, and although not harmful, may discourage the use of an otherwise adequate water source. We will demonstrate the ability of flame and furnace atomic adsorption to determine the U.S. primary and secondary drinking water contaminants (with the exception of mercury) and several other elements of interest in the European Community.

? Jaganathan, J. (1996), A random testing of table wines for arsenic using electrothermal atomic absorption spectrometry. *Atomic Spectroscopy*, **22** (2), 280-283.

Abstract: An atomic absorption spectrometric method is described for the determination of total arsenic in table wines. A Zeeman background correction atomic absorption spectrometer was used for this study. The complex matrices in the wine were considerably reduced by evaporating the aqueous phase and then digesting the residue with concentrated nitric acid. Using palladium nitrate as the matrix modifier, the determination was successfully carried out in wines containing different levels of dissolved solids. An arsenic electrodeless discharge lamp was used to get better detection limits. Calibration curves from aqueous standards were used to calculate the detection limits of the analyte. The average detection limit (15 repetitive measurements of the blank), calculated as 3 sigma /slope of the calibration curve, was 0.5 µg/L. A random survey of a limited number of domestic and imported table wines was conducted to monitor the concentration levels of arsenic. The arsenic concentrations in these samples were found to be significantly lower than the maximum tolerance level of 50 µg/L in bottled water and in drinking water, set by the United States Food and Drug Administration and the Environmental Protection Agency.

Keywords: Plasma-Mass-Spectrometry, Performance Liquid-Chromatography, Elemental Speciation

# Title: Auditing-A Journal of Practice & Theory

Full Journal Title: Auditing-A Journal of Practice & Theory

ISO Abbreviated Title: Audit.-J. Pract. Theory

JCR Abbreviated Title: Auditing-J Pract Th

ISSN: 0278-0380

Issues/Year: 2

Journal Country/Territory: United States

Language: English

Publisher: Amer Accounting Assoc

Publisher Address: 5717 Bessie Dr, Sarasota, FL 34233

Subject Categories:

Business, Finance: Impact Factor 0.438, / (2002)

? Krogstad, J.L. and Smith, G. (2003), Assessing the influence of Auditing: A journal of practice & theory: 1985-2000. *Auditing-A Journal of Practice & Theory*, **22** (1), 195-204.

Full Text: [2003\Aud-J Pra The22, 195.pdf](2003/Aud-J%20Pra%20The22,%20195.pdf)

Abstract: This study utilizes citation analysis to explore the impact and standing of Auditing: A Journal of Practice & Theory (AJPT) both within the accounting/auditing discipline and in the context of related fields. More specifically, the citations to AJPT from other journals included in the Social Sciences Citation Index (SSCI), plus citations appearing in additional, high-quality accounting/auditing journals (not included in the SSCI) are combined with self-citations to yield a database of 3,102 citations for the period 1985 through 2000. This database is analyzed to observe trends and to identify journals citing AJPT most frequently. Additionally, articles and authors cited most widely are enumerated. AJPT’s growing influence and stature are documented, and the results support the conclusion that the Auditing Section’s journal has continued to adhere to its essential objective of promoting communication between auditing research and practice.

Keywords: Citation Analysis, Citations, Auditing Literature, Citation Analysis, Impact, Articles, Authors

# Title: Austral Ecology

Full Journal Title: Austral Ecology

ISO Abbreviated Title: Austral Ecol.

JCR Abbreviated Title: Austral Ecol

ISSN: 1442-9985

Issues/Year: 6

Journal Country/Territory: Australia

Language: English

Publisher: Blackwell Science Asia

Publisher Address: 54 University St, P O Box 378, Carlton, Victoria 3053, Australia

Subject Categories:

Ecology: Impact Factor 0.658, / (2001)

? Hunt, M.A., Davidson, N.J., Unwin, G.L. and Close, D.C. (1983), Ecophysiology of the soft tree fern, Dicksonia antarctica labill. *Austral Ecology*, **27** (4), 360-368.

Abstract: Environmental constraints on gas exchange, stomatal conductance and water relations were investigated in the Soft Tree Fern, Dicksonia antarctica, at sites across its natural distribution and in the glasshouse. Dicksonia antarctica exhibited strong stomatal response down to a vapour pressure deficit (VPD) of 0.25 kPa, an unusual characteristic when compared with other ground fern species. Net photosynthetic rate may be a response of the microenvironment prevalent during frond development, reflecting acclimatory capacity. Both these ecophysiological characteristics are consistent with the ecological niche of D. antarctica, a long-lived, fire-resistant species that, during its lifetime, may be exposed to: (i) a humid environment beneath a rainforest canopy; and (II) an exposed environment following wildfire. Maximum net photosynthesis and quantum yield of photosynthesis correlated strongly with VPD and the maximum net photosynthetic rate of 10.8 mumol m-2 s-1 was the highest yet recorded for a fern. These observations are consistent with the relatively low growth typically observed in D. antarctica on sunny, exposed sites and vice versa on cool, humid sites exposed to sunflecks. Favourable water relations maintained under conditions of moderate VPD (2.03 kPa) were probably due to stomatal control. However, inadequate rainfall or high VPD (4.98 kPa) caused water stress, recovery of which was limited by slow water transport through fronds. These observations are consistent with the limitation of D. antarctica distribution to sites sheltered from hot winds and with reliable water supply. The funnel-shaped rosette of fronds of D. antarctica may harvest rainfall and make it accessible to aerial roots situated at the base of fronds. This process may maintain favourable water relations independently of a subterranean root system. This proposed strategy of water acquisition is unique for a fern species and may eliminate a need for soil moisture competition with surrounding plant species. It is suggested that the ecophysiological characteristics observed in D. antarctica in this study may contribute to the ecological niche it occupies, which is characterized by a variable environment.

Keywords: Photosynthesis, Stomatal Conductance, Vapour Pressure Deficit, Water Relations, Stomatal Conductance, Forest Canopy, Water, Bracken, Plants

# Title: Australian Academic & Research Libraries

Full Journal Title: Australian Academic & Research Libraries

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Drummond, R. and Wartho, R. (2009), Rims: the research impact measurement service at the University of New South Wales. *Australian Academic & Research Libraries*, **40** (2), 76-87.

Abstract: In 2005, the Library at UNSW began a comprehensive restructuring process that fundamentally changed the provision of services to its academic community. A primary aim of this process was to increase flexibility of service development and delivery and so to improve research support. The motivation for reformed services arose from considerations including the University Library need to realign its services to support the university’s strategic goals, the increasingly competitive nature of the research environment, the introduction of the RQF/ERA, and a renewed emphasis on research outcomes by UNSW The measurement of research impact using bibliometrics was seen as a strategy for supporting UNSW researchers. University Library staff consulted the bibliometrics literature and apropriate methodologies were devised to measure the impact of publications, authors and departments. The result was the creation of a Research Impact Measurement Service (RIMS) that now produces over 30 reports every month and employs 6-7 full time equivalent staff. Most of the reports are used to support promotion, grants, and institutional comparisons. This research support service also informs and improves the performance of such traditional library activities as collection development. RIMS is now integral to the measurement of research outputs at UNSW, and has significantly raised the profile of the Library throughout the academic community. AARL June 2009 vol 40 no 2 pp 76-87.

Keywords: Bibliometrics, Citation, Counts, Libraries, Outcomes, Publications, Research

# Title: Australian Clinical Review

Full Journal Title: [Australian Clinical Review](http://www.biowizard.com/pmsearch.php?q=%22Aust%20Clin%20Rev%22%5bJour%5d)

ISO Abbreviated Title: Aust. Clin. Rev.

JCR Abbreviated Title:

ISSN: 0726-3139

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Jackway, P. and Boyce, R. (1990), Gift co-authorships: A tangled web. *Australian Clinical Review*, **10** (2), 72-75.

# Title: Australian Educational Researcher

Full Journal Title: Australian Educational Researcher

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Bates, R. (2003), Phelan’s bibliometric analysis of the impact of *Australian Educational Researcher*. *Australian Educational Researcher*, **30** (2), 57-64.

Full Text: [2003\Aus Edu Res30, 57.pdf](2003/Aus%20Edu%20Res30,%2057.pdf)

Abstract: Phelan (2000) has produced a complex bibliometric analysis of the international contribution of Australian educational research based upon publications and citations reported in the journals indexed by the Institute for Scientific Information the Standard & Poors of the academic world. This paper examines Phelan’s analysis, showing its strengths and weaknesses, as well as examining his proposal for the establishment of an Australian database along the lines of the ISI’s index.

# Title: Australian Journal of Agricultural Research

Full Journal Title: Australian Journal of Agricultural Research

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0004-9409

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Rixon, A.J. and Bridge, B.J. (1967), Soil fertility changes in a red-brown earth under irrigated pastures. 3. Water relations of mat and surface soil. *Australian Journal of Agricultural Research*, **18** (5), 741-753.

Full Text: [1960-80\Aus J Agr Res18, 741.pdf](1960-80/Aus%20J%20Agr%20Res18,%20741.pdf)

Abstract: The water relations of the surface mat of organic matter and the underlying 2.5 cm of soil from three annual and three perennial pastures of the same age were examined before and after mixing by cultivation. In either circumstance, the water relations of the 0-2.5 cm soil horizon did not differ significantly between the various pastures. The mats retained a considerable amount of water over a wide range of matric potentials. The organic carbon contents and amounts of water retained in the mats at - 1520 J/kg matric potential were linearly related; at -9.8 J/kg and at -0,098 J/kg matric potentials they were linearly related, but the regression coefficients for mats from annual pastures were significantly greater than for mats from perennial pastures. Incorporation of the mat into the soil slightly increased the total porosity of the 0-2.5 cm soil horizon and changed the pore size distribution towards larger pores. Available water capacity (AWC) was defined as the depth of water held between the limits -0.098 and -1520 J/kg matric potentials. The AWC of the 0-7.6 cm soil horizon plus overlying pasture mat was less than that of the equivalent depth of cultivated soil with incorporated mat for all pastures. With the more conventional limits of AWC between -9.8 and -1520 J/kg matric potential, more water was available in the 0-7.6 cm soil plus mat than in the equivalent depth of cultivated soil, except in the case of an annual grass pasture.

# Title: Australian Journal of Botany

Full Journal Title: Australian Journal of Botany

ISO Abbreviated Title: Aust. J. Bot.

JCR Abbreviated Title: Aust J Bot

ISSN: 0067-1924

Issues/Year: 6

Journal Country/Territory: Australia

Language: English

Publisher: C S I R O Publications

Publisher Address: 150 Oxford St, Po Box 1139, Collingwood, Victoria 3066, Australia

Subject Categories:

Plant Sciences: Impact Factor 0.782, 71/137 (2000)

? Doley, D. (1983), Chlorosis in a tree fern (Cyathea-cooperi) induced by brief heat-stress. *Australian Journal of Botany*, **31** (1), 23-33.

? Ash, J. (1986), Demography and production of Leptopteris-wilkesiana (Osmundaceae), a tropical tree-fern from Fiji. *Australian Journal of Botany*, **34** (2), 207-215.

? Ash, J. (1987), Demography of Cyathea-hornei (Cyatheaceae), a tropical tree-fern in Fiji. *Australian Journal of Botany*, **35** (3), 331-342.

? Ashton, D.H. (2000), The Big Ash Forest, Wallaby Creek, Victoria: Changes during one lifetime. *Australian Journal of Botany*, **48** (1), 1-26.

Abstract: In 1949 the area of mature Eucalyptus regnans F. Muell(1), (the Big Ash) on the Hume Range, Victoria, was a largely even-aged 230-year-old forest with a component of the overstorey derived from a fire in 1851. Subsequent fires have resulted in patchy regeneration where suitable gaps in the overstorey were present. In 1949 three main types of the understorey were present: type A, mature Pomaderris aspera; type B, dense immature Pomaderris aspera; and type C, coppiced Olearia argophylla and Bedfordia arborescens. In type A, ground fern was patchy and statistically correlated with patches of lower density Pomaderris aspera. Over a period of 48 years the eucalypt overstorey has been depleted by death and windthrow while understorey trees and shrubs have been severely damaged by sporadic heavy snowfalls and insect and fungal attack. The type A understorey is now showing signs of changing to Olearia argophylla dominance and the cover of ground fern and tree fern strata has doubled to more than 80% over this period in spite of damage caused by infrequent, but severe, droughts. The type B understorey is now mature and resembles type A, while the type C understorey shows invasion by Pomaderris aspera and regeneration of Olearia argophylla. No successful establishment of E. regnans has occurred. The rainforest in the gullies consists of alternating patches of forest and tree fern groves, the latter, together with rotting logs and upthrown root balls, providing niches for rainforest tree establishment. In swampy flats of Leptospermum grandifolium on the plateau Atherosperma moschatum is becoming increasingly dominant. Atherosperma moschatum is also invading mature understorey adjacent to riparian communities. This species and Olearia argophylla may constitute the final stage of the long secondary succession after fire in the Big Ash area. However, the Hume Range is adjacent to drier foothills and plains to the north, west and south. Whether the Big Ash will be spared from fire in future centuries is very doubtful.

# Title: Australian Journal of Chemistry

Full Journal Title: [Australian Journal of Chemistry](http://www.publish.csiro.au/nid/51.htm)

ISO Abbreviated Title: Aust. J. Chem.

JCR Abbreviated Title: Aust J Chem

ISSN: 0004-9425

Issues/Year: 12

Journal Country/Territory: Australia

Language: English

Publisher: C S I R O Publishing

Publisher Address: 150 Oxford St, PO Box 1139, Collingwood, Victoria 3066, Australia

Subject Categories:

Chemistry: Impact Factor

? Winfield, M.E. (1953), Transient rates of gas sorption. 1. Measurement of rapid gas uptake by oxide catalysts. *Australian Journal of Chemistry*, **6** (3), 221-233.

Abstract: The rate of gas uptake by a porous solid in a constant volume system was deter- mined by measuring the decrease in pressure, using a capacitance-type glass diaphragm manometer. Techniques are described for admitting gas to adsorbent quickly, and for measuring rapid changes at low pressures and high temperatures. For water and alcohols the rates of uptake by thoria and alumina at 110-200 °C were found to have a negative temperature coefficient. Rates were first order with respect to initial pressure. Three types of rate dependence on mass of adsorbent were found - first, zero, and second order or exponential.

Sutherland, K.L. and Winfield, M.E. (1953), Transient rates of gas sorption. 2. Rate equations for transport and adsorption in porous adsorbents. *Australian Journal of Chemistry*, **6** (3), 234-243.

Abstract: Equations are derived to describe the rate at which gas passes into a bed of adsorbent under conditions of constant volume and diminishing pressure. of the processes which may be responsible for the observed rate of gas uptake, the following three are considered : (i) Knudsen flow within the bed, or within the granules of which it is composed, with simultaneous adsorption that is too fast to be a limiting factor; (II) chemisorption which is controlled by the rate of Knudsen flow; (III) unrestricted chemisorption.It is shown how the rate constants used in the equations are related to the overall reaction rate constant in a catalyst pore.

? Sutherland, K.L. and Winfield, M.E. (1953), Transient rates of gas sorption. 3. Pore structure, adsorption isotherms, and calculated rates at constant volume. *Australian Journal of Chemistry*, **6** (3), 234-243.

Abstract: The pore structure has been determined for the thoria, alumina monohydrate, and γ-alumina adsorbents of Part I of this Series; also the Henry’s law constants when the adsorbate is water vapour at 140 °C. Using these quantities in the equations given in Part II it is shown how the calculated rate of Knudsen flow, accompanied by rapid adsorption on the pore walls, can account for the experimental rates of gas uptake by the two aluminas. None of the equations can account for the dependence of the rate of uptake by thoria on the square (or higher power) of the mass of the bed. It is suggested that a poisoning phenomenon may be responsible. In deciding the nature of the limiting step in gas uptake by an adsorbent, the dependence of the rate on the mass of the bed is a useful criterion. The temperature coefficient is not informative unless it is positive. The methods and results described in Parts I, II, and III can be applied in the study of gas adsorption and flow in the catalyst pellets of a fixed-bed industrial reactor. They should also be capable of predicting the unsteady reaction rates within a granule in a fluidized bed.

? Allen, J.A. and Scaife, P.H. (1966), Infrared spectra in Ag2O-CO2-Ag2CO3 system. *Australian Journal of Chemistry*, **19** (5), 715-724.

Abstract: The infrared spectrum of silver oxide, Ag2O, has been clarified by comparison with that of silver carbonate. In the region 4000-400 cm-l the spectrum consists of one broad band centred around 530 cm-l, other bands being accounted for in terms of normal, basic, and complex carbonates and surface hydroxyl groups, which are frequently present as contaminants. Conditions for the preparation, storage, and purification of silver oxide to minimize carbonate contamination are defined.

Allen, J.A. and Scaife, P.H. (1966), The Elovich equation and chemisorption kinetics. *Australian Journal of Chemistry*, **19** (11), 2015-2023.

Abstract: A generalized Elovich equation which takes account of features of chemi- sorption not previously included is presented and discussed. A systematic procedure for determining the parameters, the initial rates, and the corresponding apparent activation energy is described.

A method based on a linear regression analysis which is capable of evaluating the parameters more satisfactorily than graphical and numerical methods is proposed and applied to a range of existing experimental data.

? Allen, J.A. and Scaife, P.H. (1967), Adsorption of ethylene on silver(I) oxide. I. Rates of adsorption. *Australian Journal of Chemistry*, **20** (3), 399-407.

Abstract: The rates of adsorption of ethylene on silver(I) oxide, Ag2O, have been measured in the temperature range 273-313°K. The kinetic data are analysed in terms of the generalized Elovich equation by methods developed and described in a previous paper.1 The activation energy derived from the rates at zero coverage is 15.6 kcal mole-1. The presence of isothermal anomalies is noted and the extent of each kinetic stage defined. A qualitative explanation of the existence of these stages is suggested

? Allen, J.A. and Scaife, P.H. (1967), Adsorption of ethylene on silver(I) oxide. II. Adsorption equilibria. *Australian Journal of Chemistry*, **20** (3), 409-414.

Abstract: The adsorption of ethylene on silver(I) oxide in the temperature range 190-363°K has been studied by volumetric and gas chromatographic methods. A reversible adsorption process characterized by an isosteric heat of 8.4 kcal mole-1 extends over the whole range of temperature and coverage, and coexists at temperatures greater than 250°K with an activated adsorption process described in the preceding paper.

? Allen, J.A. and Scaife, P.H. (1967), Adsorption of ethylene oxide on silver(I) oxide. *Australian Journal of Chemistry*, **20** (5), 837-844.

Abstract: The adsorption of ethylene oxide on stabilized silver(I) oxide in the temperature range 210-373% comprises two processes: (i) A non-activated process with a heat of adsorption from 10.7 to 6.9 kcal mole-l depending on the coverage, which persists over the entire temperature range; (II) an activated process with an activation energy at zero coverage of 22.7 kcal mole-1, which occurs at temperatures greater than 250°K. Reaction between adsorbate and adsorbent ensues above 323%. The generalized Elovich equation has been found to apply to the activated process at high coverage, and an explanation for this is proposed.

# Title: Australian Journal of Dairy Technology

Full Journal Title: Australian Journal of Dairy Technology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Adams, D.J. (1986), A bibliometric analysis of literature covered by the *Australian Journal of Dairy Technology* in 1983. *Australian Journal of Dairy Technology*, **41** (1), 35-37.

Keywords: Bibliometric, Bibliometric Analysis, MAR

? Parodi, P.W. (2001), Cow’s milk components with anti-cancer potential. *Australian Journal of Dairy Technology*, **56** (2), 65-73.

Abstract: Milk contains a number of components with anti-cancer potential. Associated with the fat phase is conjugated linoleic acid (CLA), which is a potent inhibitor of mammary tumourigenesis and perhaps has a role in prostate cancer therapy. Sphingomyelin and other sphingolipids suppressed colon tumour development in mice. Butyric acid, uniquely present in milk, can inhibit mammary tumour occurrence in rats while 13-methyltetradecanoic acid suppressed cell growth in a number of human cancer cell lines and inhibited the growth of human prostate and liver cancer cells implanted in mice. Milk lipids also contain the common anticancer agents beta -carotene and vitamin A. Milk protein, particularly whey protein and its components, have potent anti-tumour action in animal models of colon and mammary tumourigenesis. In this regard whey is superior to other proteins such as beef and soy. This benefit is considered to be due to the content of the sulphur amino acids cysteine and methionine, which are precursors of glutathione, a powerful cellular antioxidant. Glutathione is also responsible for maintaining an effective immune response. Recently a number of studies demonstrated that bovine lactoferrin could inhibit tumour development in the rodent colon, lung, oesophagus, bladder and tongue. In addition, lactoferrin can inhibit angiogenesis and prevent metastases. Milk is a rich source of calcium. A large number of animal studies and human epidemiological and intervention studies suggest calcium can help prevent colon adenoma and carcinoma.

Keywords: Conjugated Linoleic-Acid, DNA Adduct Formation, Aberrant Crypt Foci, Female F344 Rats, K-Ras Codon-12, Bovine Lactoferrin, Breast-Cancer, Anticarcinogenic Agents, Colon Carcinogenesis, Tumor-Metastasis

# Title: Australian Journal of Earth Sciences

Full Journal Title: Australian Journal of Earth Sciences

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Armstrong, R.L. (1991), The persistent myth of crustal growth. *Australian Journal of Earth Sciences*, **38** (5), 613-630.

Full Text: [1991\Aus J Ear Sci38, 613.pdf](1991/Aus%20J%20Ear%20Sci38,%20613.pdf)

Abstract: From the extraterrestrial telescopic, space probe, meteorite and returned sample studies of planetary evolution, and terrestrial evidence for early differentiation of core and fluid spheres and continental crust, I feel the conclusion is inescapable that large terrestrial planets of our solar system underwent essentially immediate differentiation into relatively constant-volume core, depleted mantle, enriched crust and fluid reservoirs. Differentiation was an early event, carried rapidly to completion. It is a false premise to have the formation of sialic crust on Earth dragged out over billions of years after hot accretion. The uniqueness of the Earth arises from its size, retention of water and dynamic surface-renewal processes, which have effectively erased all vestiges of the first several hundred million years of its crustal history. A large volume of depleted mantle always existed and an isotopically nearly homogeneous character for mantle and crust in early times was only sustained by rapid convective stirring of the silicate Earth. The sigmoidal continental crust age curve that is recorded in whole rock Nd and zircon U-Pb dates is a predictable consequence of the highly exponential decline in stirring rates. It represents survival, not the original extent of crustal domains. Positive epsilon(Nd)(T) values for Archaean mantle-derived magmas are quantitatively predicted by this model, as are the observed depleted-mantle model ages of clastic sedimentary rocks. Current rates of crustal accretion and loss of crust by sediment subduction and tectonic erosion are approximately in balance and compatible with negligible crustal growth at present. Claims that current growth is approximately 1 km3 per year are based on incorrect and selectively cited data and incomplete analyses of the freeboard argument. The idea that the Earth’s crust has grown is a myth dating from the 19th century and was established as geochemical dogma in the 1950s and 1960s. It has survived by inertia and repetition and endless self-citation. The alternative no-growth view has been sometimes ignored, frequently questioned and downplayed, often cited only as an end member hypothesis (on the presumption that the truth must lie between extremes), and sometimes acclaimed and supported. Evidence in its favour has been accumulating. The growth myth has survived, however, as the consensus. In science, conventional wisdom is difficult to overturn. After more than 20 years some implications of plate tectonics have yet to be fully appreciated by isotope geochemists who advocate crustal growth, and by geologists and geophysicists who have followed their lead.

Keywords: Archean Plate-Tectonics, Crustal Growth, Earths Crust, Freeboard, Geological Time, Greenstone Belts, Island-Arc Magmatism, Isotopic Constraints, Lead, Lower Continental-Crust, Mantle Evolution, ND-Isotope and HF-Isotope, Recycling, Retention, Science, Sediment, Sedimentation-Rates, Self-Citation, SR Isotopes, System, Water

# Title: Australian Journal of Ecology

Full Journal Title: Australian Journal of Ecology

ISO Abbreviated Title: Aust. J. Ecol.

JCR Abbreviated Title: Aust J Ecol

ISSN: 0307-692X

Issues/Year: 4

Journal Country/Territory: Australia

Language: English

Publisher: Blackwell Science Asia

Publisher Address: 54 University St, P O Box 378, Carlton, Victoria 3053, Australia

Subject Categories:

Ecology: Impact Factor 1.504, /

? Ashton, D.H. and Bassett, O.D. (1997), The effects of foraging by the superb lyrebird (Menura novae-hollandiae) in Eucalyptus regnans forests at Beenak, Victoria. *Australian Journal of Ecology*, **22** (4), 383-394.

Abstract: In an early spar-stage stand of Eucalyptus regnans at Beenak, Victoria, foraging by lyrebirds in bare floor areas on steep slopes results in a complex microtopography of excavations, accumulations and terracettes. About 200 t ha-1, of litter and top soil may be displaced an average of 70 cm downhill per year. Magnetic ferruginous pisolite was used as a marker to monitor progressive soil movement over 3 years. Very little disturbance occurred in areas of dense ground fern, but in bare areas the whole forest floor may be turned over every 20 months. In the site studied, foraging activity by lyrebirds varied seasonally and topographically. Disturbance by other biotic agents was minimal. The mean depth of soil cultivation was about 10 cm and litter was frequently buried or mixed intimately with soil. Since buried leaf litter decays more quickly than that on the surface, lyrebird foraging is likely to increase the rate of nutrient cycling. The small, steep clifflets left at the uphill limits of each scratch microsite provide litter-free niches for the establishment of tree fern prothalli and shade-tolerant herbs. All stages in the growth of the rough tree fern, Cyathea australis, were present in bare floor areas, but in dense ground fern patches, young stages were confined to rotten logs and upturned root balls. Since dense tree fern development tends to diminish the cover of dense ground fern, lyrebird foraging activity may maintain an accessible food resource which would otherwise diminish with increased ground fern cover in these forests in the course of secondary succession after fire.

Keywords: Forest Floor Disturbance, Litter Decomposition, Soil Nutrients, Tree Fern Regeneration, Wet Sclerophyll Forest, Regeneration

# Title: Australian Journal of Experimental Biology and Medical Science

Full Journal Title: Australian Journal of Experimental Biology and Medical Science

ISO Abbreviated Title:

JCR Abbreviated Title: Aust J Exp Biol Med Sci

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Reeves, P. (1965), Adsorption and kinetics of killing by colicin CA42-E2. *Australian Journal of Experimental Biology and Medical Science*, **43** (2), 191-??.

# Title: Australian Journal of Political Science

Full Journal Title: [Australian Journal of Political Science](http://www.informaworld.com/smpp/title~db=all~content=t713404457~tab=issueslist)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1036-1146

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Donovan, C. (2007), The hidden perils of citation counting for Australasian political science. *Australian Journal of Political Science*, **42** (4), 665-678.

Abstract: In a recent article in Australian Journal of Political Science, Dale and Goldfinch present ‘standard’ journal-based publication and citation rankings of Australasian political science departments designed to complement what they characterise as the multidisciplinary, historical, qualitative and humanistic political science of the region. However, the ‘highly cited’ articles in their top-ranked political science department belong to quantitative psychology. Through unravelling why their study favours the opposite of that which 4 was meant. to detect, this paper alerts political scientists to the hidden perils of accepting ‘standard’ Institute of Scientific Information-based approaches to citation counting as valid measures of research ‘quality’. It exposes the veiled bibliometric assumption that the ‘best’ social science. is quantitative research, notes that incongruous citation scores may inform the distribution of block funding and departmental appointment processes, and warns against using ‘standard’ data to unintentionally self-police the future shape of Australasian political science.

Keywords: Appointment, Australian, Bibliometric, Books, Citation, Data, Disciplines, Distribution, Funding, Humanities, Multidisciplinary, Psychology, Publication, Qualitative, Quality, Rankings, Research, Science, Shape, Social, Social Science, Social-Sciences, Sociology, Standard

# Title: Australian Journal of Psychology

Full Journal Title: Australian Journal of Psychology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Haslam, N. and Koval, P. (2010), Possible research area bias in the Excellence in Research for Australia (ERA) draft journal rankings. *Australian Journal of Psychology*, **62** (2), 112-114.

Abstract: An analysis of the Excellence in Research for Australia (ERA) draft rankings of 661 psychology journals points to systematic differences between research areas in the distribution of ranks. Journals in experimental, biological and neuroscientific psychology obtained higher mean ranks, consistent with a tendency for ohard-scienceo areas to have higher bibliometric journal impact. The ERA will influence the distribution of resources and rewards within psychology and create powerful incentives for institutions and researchers, so differences in ranks across research areas may alter the shape of the discipline. Although they do not necessarily imply bias, such differences raise the possibility that psychology researchers will not operate on a level playing field.

Keywords: Australia, Bias, Bibliometric, Biological, Discipline Issues, Distribution, ERA, Impact, Journal, Journal Impact, Journal Rankings, Journals, National Development of Psychology, Psychology, Psychology as A Discipline, Rankings, Research, Researchers

# Title: Australian Journal of Public Health

Full Journal Title: Australian Journal of Public Health

ISO Abbreviated Title: Aust. J. Public Health

JCR Abbreviated Title: Aust J Public Health

ISSN: 1035-7319

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Public Health Assoc, Canberra

Publisher Address:

Subject Categories:

: Impact Factor

? Kawachi, I. and Pearce, N. (1991), Aluminium in the drinking water: Is it safe? [editorial]. *Australian Journal of Public Health*, **15** (2), 84-87.

? McAnulty, J.M., Rubin, G.L., Carvan, C.T., Huntley, E.J., Grohmann, G. and Hunter, R. (1993), An outbreak of Norwalk-like gastroenteritis associated with contaminated drinking water at a caravan park. *Australian Journal of Public Health*, **17** (1), 36-41.

Abstract: During the 1989 Christmas holiday period, a large outbreak of gastroenteritis occurred, Among persons staying at a caravan park in southern New South Wales. Review of local hospital records found that 77 per cent of patients presenting with infective diarrhoea between 29 December and 3 January had stayed at the caravan park. In a retrospective cohort study we compared rates of illness among caravan park patrons exposed to different water sources. Stools were tested for pathogens and convalescent sera for viral antibodies. Rain and reticulated river water sampled from the caravan park were tested for bacteria and viruses. of 351 persons interviewed at the caravan park, 305 (87 per cent) reported an illness characterised by diarrhoea, vomiting and abdominal pain. of 196 persons who used reticulated river water for drinking or ablutions, 175 (89 per cent) became ill compared with 47 of 72 persons (65 per cent) who did not use this water (relative risk 1.4, 95 per cent confidence interval 1.2 to 1.6). The outbreak was probably caused by a 27-28 nm small round structured virus found in the stool from one ill person. High levels of faecal coliforms in the reticulated river water and enterovirus in sediment samples suggest that the outbreak was caused by sewage contaminating the reticulated river water through a break in the pipe directly over the underground water tanks. To prevent such outbreaks, poor water and sewerage system layouts should be avoided and nonpotable water should be clearly labelled. Where feasible, all camping-ground water should stem from town supplies.

? Pilotto, L.S. (1995), Disinfection of drinking water, disinfection by-products and cancer: What about Australia? *Australian Journal of Public Health*, **19** (1), 89-93.

Abstract: Chlorine, commonly used to disinfect drinking water, produces by-products known from animal studies to be carcinogenic and mutagenic. Most epidemiological studies into the possible association between chlorination by-products in drinking water and cancer have been ecological in nature, or have relied on case-control designs based on death certificates. Interpretation of results arising from these studies is limited. Individual levels of toxicant exposure and many potential confounders and effect modifiers are unable to be accounted for in the analyses. At best, these studies generate hypotheses that require more definitive investigation. Misclassification of individuals based on inaccurate assessment of the level of exposure is probable. The few analytic studies able to overcome or minimise these problems suggest a clear link between exposure to chlorinated drinking water and the development of urinary bladder cancer. They also suggest a possible link with rectal cancer. However, these studies have classified subjects by exposure to chlorinated drinking water, rather than to levels of chlorine and its by-products in drinking water. To date, the link between levels of chlorine and its by-products in water, levels of consumption and cancer has not been made. Information on the levels of chlorine and some by-products is available in many water jurisdictions in Australia. Further, epidemiological methods can be employed to quantify water consumption. Case-control studies linking these parameters would help us to understand the magnitude of the risk to human populations and provide a basis to investigate mechanisms for risk reduction.

? Leonard, D., Beilin, R. and Moran, M. (1995), Which way Kaikai Blo Umi? Food and nutrition in the Torres Strait. *Australian Journal of Public Health*, **19** (6), 589-595.

Abstract: The people of the Torres Strait suffer a disproportionate level of diet-related disease, especially diabetes. The Torres Strait Health Strategy identified the difficulty in obtaining healthy food, particularly fruit and vegetables, as a major problem for people living in the Torres Strait. This study examined traditional plant food supply systems and current local production of fruit and vegetables. The supply system of fruit and vegetables from mainland Australia was also examined. Traditional garden food production was seen to continue (mainly to provide food for ceremonial occasions), but had declined because of easy access to store foods, changes in the physical, social and economic environment, limited access to land and water, and quarantine restrictions on movement of garden produce. Supplies of fruit and vegetables from the Australian mainland were infrequent and the prolonged transit time meant that produce was often in poor condition on arrival and prone to continued rapid deterioration due to limited store-level storage facilities. Demand for fresh produce exceeded supply.

# Title: Australian Journal of Scientific Research Series A-Physical Sciences

Full Journal Title: Australian Journal of Scientific Research Series A-Physical Sciences

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Sutherland, K.L. (1952), The kinetics of adsorption at liquid surfaces. *Australian Journal of Scientific Research Series A-Physical Sciences*, **5** (4), 683-696.

# Title: Australian Journal of Soil Research

Full Journal Title: [Australian Journal of Soil Research](http://www.publish.csiro.au/journals/ajsr/contents.cfm); [Australian Journal of Soil Research](http://www.publish.csiro.au/nid/84.htm?nid=85&aid=73)

ISO Abbreviated Title: Aust. J. Soil Res.

JCR Abbreviated Title: Aust J Soil Res

ISSN: 0004-9573

Issues/Year: 6

Journal Country/Territory: Australia

Language: English

Publisher: C S I R O Publishing

Publisher Address: 150 Oxford St, PO Box 1139, Collingwood, Victoria 3066, Australia

Subject Categories:

Agriculture, Soil Science: Impact Factor 1.078, 10/29 (2000)

? Hingston, F.J. and Raupach, M. (1967), Reaction between monosilicic acid and aluminium hydroxide. I. Kinetics of adsorption of silicic acid by aluminium hydroxide. *Australian Journal of Soil Research*, **5** (2), 295-309.

Full Text: [1960-80\Aus J Soi Res5, 295.pdf](1960-80/Aus%20J%20Soi%20Res5,%20295.pdf)

Abstract: Studies of the reaction between monosilicic acid and crystalline aluminium hydroxide showed that a number of layers of silicic acid could be formed on the surface of the hydroxide. Silicate is considered to be adsorbed as silicic acid rather than as silicate ions. The first layer was produced by rapid reaction of silicic acid with the surface of aluminium hydroxide. The isotherm for this initial reaction was not affected by varying the temperature from 10 to 35°C or by increasing the ionic strength of the supporting electrolyte solution. Adsorption of silicic acid resulted in increased KOH uptake by (or H2SO4 displacement from) the solid phase, which corresponded to a decrease in pH of the suspension. Subsequent layer formation was slower; the rate increased both with increasing temperature and with the ionic strength of the supporting electrolyte solution. Study of the kinetics of the reaction showed that these layers could have formed by polymerization of silicic acid on the hydroxide surface. The activation energy for the reaction increased with increasing surface coverage from 15 to 24 kcal/mole for the second layer and was about 24 kcal/mole for the third layer.

? Mckenzie, R.M. (1980), Adsorption of lead and other heavy metals on oxides of manganese and iron. *Australian Journal of Soil Research*, **18** (1), 61-73.

Full Text: [1960-80\Aus J Soi Res18, 61.pdf](1960-80/Aus%20J%20Soi%20Res18,%2061.pdf)

Abstract: Measurements were made of the adsorption of cobalt, copper, manganese, nickel, lead, and zinc on nine synthetic manganese oxides and three synthetic iron oxides, to determine the mechanism by which lead accumulates in the manganese oxides in soils. Adsorption of lead by the manganese oxides was up to 40 times greater than that by the iron oxides, and lead was adsorbed more strongly than any of the other ions studied by all of the oxides except goethite. This is considered to be the reason for the accumulation of lead in the manganese oxides in soils. No evidence was found for the oxidation of lead, nor for the formation of specific lead-manganese minerals.

? Mead, J.A. (1981), A comparison of the Langmuir, Freundlich and Temkin equations to describe phosphate adsorption properties of soils. *Australian Journal of Soil Research*, **19** (3), 333-342.

Full Text: [1981\Aus J Soi Res19, 333.pdf](1981/Aus%20J%20Soi%20Res19,%20333.pdf)

Abstract: Four adsorption equations were fitted to phosphate isotherm data for 38 soils from northern New South Wales. The two-surface Langmuir equation provided the best fit to the data. The Freundlich equation, however, was almost as effective, provided that an estimate of native adsorbed phosphate was included. It required fewer adsorption points because the transformed data produced a straight line. A regression constant, a, from the Freundlich equation although underestimating adsorption capacity, calculated from the Langmuir II equation, was highly correlated with this parameter (r = 0.984) and a buffering index (r = 0.986), calculated from the Langmuir I equation. The other Freundlich regression constant, n, was significantly correlated (P <1%) with the intensive parameters of adsorption from the one- and two-surface Langmuir equations. Since only two adsorption points are required for fitting the Freundlich equation and the parameters are easier to derive, it is suggested that this equation may be more suitable for commercial soil-testing laboratories than the Langmuir one- and two-surface equations for routine determination of phosphate adsorption characteristics of soils.

? Padmanabham, M. (1983), Comparative-study of the adsorption-desorption behavior of copper(II), zinc(II), cobalt(II) and lead(II) at the goethite-solution interface. *Australian Journal of Soil Research*, **21** (4), 515-525.

Full Text: [1983\Aus J Soi Res21, 515.pdf](1983/Aus%20J%20Soi%20Res21,%20515.pdf)

Abstract: The relative position of the adsorption curves for copper(II), zinc (II), cobalt(II) and lead(II) with respect to pH is shown to be related to the hydrolysability of the metal ion in solution. Thus the pH values at which the same molar amounts of these cations are adsorbed on the oxide surface are correlated with their respective first hydrolysis constants (pKt\*) in solution. Such adsorption occurs well below the pKi\* values, resulting in the release of one to two moles of protons per mole of cation specifically adsorbed. The relative effect of anions such as chloride and nitrate on the adsorption-desorption behaviour of zinc(II), cobalt(II) and lead(II) has also been investigated. Desorption trends for similar molar amounts of adsorbed cations, copper(II) zinc(II) and cobalt(II) are identical. The existence of two distinct types of adsorption sites on the oxide surface corresponding with the ‘readily desorbed’ and ‘less readily desorbed’ fractions of micronutrient cations such as copper, zinc or cobalt has been confirmed. The metal cation concentration and proton concentration play a dual role in determining the partition of heavy metal cations between the solution and surface phases. The position of the adsorption curve for lead(II) with respect to pH is close to that for copper(II), but desorption of copper(II) shows a considerable hysteresis, while lead(II) does not. Specifically adsorbed lead in the presence of either chloride or nitrate is reversible with respect to its concentration in solution with no hysteresis between adsorption and desorption isotherms. All the adsorbed lead is ‘readily desorbable’.

? Weaver, D.M., Ritchie, G.S.P. and Gilkes, R.J. (1992), Phosphorus sorption by gravels in lateritic soils. *Australian Journal of Soil Research*, **30** (3), 319-330.

Full Text: [1992\Aus J Soi Res30, 319.pdf](1992/Aus%20J%20Soi%20Res30,%20319.pdf)

Abstract: The effect of sesquioxidic gravels (>2 mm size fraction) on phosphorus sorption by two gravelly lateritic soils was investigated by phosphorus sorption experiments, X-ray diffraction, autoradiography and electron microscopy. In one soil the abundance and size of gravels decreased downslope. As the gravel content of both soils increased (13-61%), the proportion of large (>8 mm) gravels increased (0-70%). Phosphorus sorption increased in the order: (>2 mm fraction) < (whole soils) < (<2 mm fraction). Phosphorus sorption on lateritic gravels (>2 mm) decreased with increasing gravel size and increased with increasing time. Phosphorus sorption by whole soils decreased with increasing gravel content. Phosphorus sorption by the >2 mm fraction was principally by the external surfaces of the gravels. The estimation of phosphorus application rates for lateritic soils depended on the amount of phosphorus required by the plant and the gravel content of the soil. The former is the important factor at low soil gravel contents whereas the latter becomes more important as the gravel content increases. The implications for fertilizer management on the soil with consistent relationships between landscape position, gravel content and subsequent P sorption properties of whole soils are discussed.

Keywords: Gravel, Laterite, Management, Phosphate, Phosphorus, Soil, Sorption

? Kookana, R.S., Naidu, R. and Tiller, K.G. (1994), Sorption non-equilibrium during cadmium transport through soils. *Australian Journal of Soil Research*, **32** (4), 635-651.

Full Text: [1994\Aus J Soi Res32, 635.pdf](1994/Aus%20J%20Soi%20Res32,%20635.pdf)

Abstract: We studied the sorption behaviour of cadmium during its transport through laboratory soil columns packed with two different soils (a Spodosol and an Oxisol). Models based on both equilibrium and time-dependent sorption reactions were used to describe observed breakthrough curves (BTCs) of cadmium. Under batch conditions, the sorption of cadmium was essentially complete within 3 h for the Spodosol and within 24 h in the Oxisol. However, sorption in the Oxisol tended to increase at a very slow rate after 10 h up to 300 h. Simulations carried out using batch sorption data, which followed the Freundlich equation, failed to describe the observed cadmium BTCs satisfactorily. A sharp BTC front was expected due to the nonlinear nature of the sorption isotherm. However, a more dispersed front with significant asymmetry was observed in both soils, indicating the occurrence of non-equilibrium sorption during cadmium transport. The presence of non-equilibrium conditions was further supported by the observed decrease in Cd concentrations in the effluent fractions collected after stopping the flow through the columns. The Cd BTCs were adequately described only when the bi-continuum (two-site/two-region) approach of solute transport modelling was utilized. Only a small degree of asymmetry was noted in chloride BTCs for both soils, thus suggesting the presence of a small physical non-equilibrium component. It is concluded that the sorption non-equilibrium observed during Cd transport is likely to be due to both sorption related (chemical) and transport-related (physical) mechanisms.

Keywords: Cadmium, Sorption, Transport, Sorption Nonequilibrium, Transport Models, Bicontinuum Approach, Potassium-Calcium Exchange, Time-Dependent Sorption, Miscible Displacement, Solute Transport, Adsorption, Kinetics, Retention, Model, Flow, Nonequilibrium

Spark, K.M., Wells, J.D. and Johnson, B.B. (1997), The interaction of a humic acid with heavy metals. *Australian Journal of Soil Research*, **35** (1), 89-101.

Full Text: [1997\Aus J Soi Res35, 89.pdf](1997/Aus%20J%20Soi%20Res35,%2089.pdf)

Abstract: The solubility of a coal humic acid and the sorption of heavy metals (Cu-(II), Zn-(II), Co-(II), and Cd-(II)) in the absence and presence of the humic acid were determined as a function of pH and concentration of background electrolyte. The solubility of the humic acid at low electrolyte concentration increases in a a-step process with increase in pH. About 80% dissolves in the pH region 3-8.5, and the remainder in the region pH >8.5. The sorption of metals occurs at pH values significantly lower than those associated with the formation of insoluble metal hydroxides, with a maximum occurring in the pH region 5.5-7.5, and involves the solid state fraction of the humic acid. At the higher electrolyte concentration, the solubility of the humic acid is again a 2-step process but the increase in acid solution occurs over a relatively narrow pH range (5-6). At high pH, the presence of the humic acid significantly reduces the precipitation of the metals st both low and high salt concentration, probably due to the formation of soluble metal-humate species. There is evidence to suggest that the major functional group of the humic acid with which the metal cations interact is the carboxyl group.

Keywords: Copper, Zinc, Cobalt, Cadmium, Sorption, Solubility, Ion Complexation Equilibria, Poly-Electrolyte Properties, Unified Physicochemical Description, Fulvic-Acids, Protonation Equilibria, Diffuse Reflectance, Electrostatic Model, Humate Complexes, Substances, Binding

Spark, K.M., Wells, J.D. and Johnson, B.B. (1997), Sorption of heavy-metals by mineral-humic acid substrates. *Australian Journal of Soil Research*, **35** (1), 113-122.

Full Text: [1997\Aus J Soi Res35, 113.pdf](1997/Aus%20J%20Soi%20Res35,%20113.pdf)

Abstract: The effect of humic acid on the sorption of metals by minerals was studied in relation to the separate interactions of the humic acid with the minerals, the humic acid with the metals and the metals with the minerals. Sorption of the metals in combined mineral-humic acid systems can be explained in terms of generalised sorption reactions. Sorption of the metals in mineral-humic acid systems is dependent on sorption of humic acid by the mineral and on the solubility of the metal-humic acid complex. Sorption is enhanced in the combined systems for the minerals goethite and silica due to secondary reactions in which metal-humic acid complexes are adsorbed by the minerals. Sorption of the metal-humic acid complex in the combined systems for ct-alumina and kaolinite is not enhanced, possibly due to competing reactions associated with the sorption of the humic acid by these minerals.

? Mann, R.A. (1997), Phosphorus adsorption and desorption characteristics of constructed wetland gravels and steelworks by-products. *Australian Journal of Soil Research*, **35** (2), 375-384.

Full Text: [1997\Aus J Soi Res35, 375.pdf](1997/Aus%20J%20Soi%20Res35,%20375.pdf)

Abstract: Laboratory phosphorus (P) adsorption and desorption experiments were conducted on 9 substrata to evaluate their potential to remove P from sewage effluent. The substrata comprised 2 gravels used in constructed wetlands, Hawkesbury sandstone, and 6 steelworks by-products: granulated blast furnace slag, blast furnace slag, steel slag, fly ash, bottom ash, and coal wash. The studies involved ion-exchange experiments and calculation of Langmuir and Freundlich adsorption isotherms and column adsorption/desorption trials. The ability to adsorb P was then correlated to the physico-chemical attributes including X-ray fluorescence analyses of each substratum. High P adsorption capacities (>380 mg/kg) were shown for granulated blast furnace slag, blast furnace slag, and steel slag, as well as fly ash. All steelworks by-products had adsorption capacities greater than the constructed wetland gravels and Hawkesbury sandstone. The P adsorption capacities of the substrata were significantly correlated with Ca (r(2) = 0.9206), Mg (r(2) = 0.8681), pH (r(2) = 0.7009), S (r(2) = 0.6696), and Si (r(2) = 0.6438) when fly ash was omitted from the analyses. Further research is recommended to evaluate the sustainability of using slags for P removal (as well as other contaminants present in wastewater), using full-scale constructed wetlands. Research should include an evaluation of any likely environmental impacts using leachability and toxicity studies.

Keywords: Adsorption, Constructed Wetlands Substrata, Disposal, Environmental, Evaluation, Fly Ash, Isotherms, Langmuir And Freundlich Isotherms, pH, Phosphate, Phosphate Adsorption Capacities, Removal, Research, Soils, Steel Slag, Steelworks By-Products, Toxicity, Treated Waste-Water, Wastewater, Wetlands

Barrow, N.J. (1998), Effects of time and temperature on the sorption of cadmium, zinc, cobalt, and nickel by a soil. *Australian Journal of Soil Research*, **36** (6), 941-950.

Full Text: [1998\Aus J Soi Res36, 941.pdf](1998/Aus%20J%20Soi%20Res36,%20941.pdf)

Abstract: Several levels of cadmium(Cd), zinc(Zn), nickel(Ni), or cobalt(Co) were added to samples of a soil as solutions of nitrate salts. The samples were incubated at about field capacity for up to 30 days at differing temperatures and the concentration of the metal ions in the soil solution was estimated at 4 times for each temperature. The effects of level of addition, time, and temperature on solution concentration were well described using a mechanistic model. The model suggests that the metals react with a differing range of soil components and that the pathways for diffusion into the particles also differ. The change in solution concentration was slowest for Cd and fastest for Co and Ni but these were not significantly faster than Zn. These results suggest that the toxic effects of Cd added to soils will not decrease greatly with time whereas the effectiveness of fertilisers (Zn and Co), and potential fertilisers (Ni), will decrease.

Keywords: Mechanistic Model, Higher-Plants, Phosphate, Desorption, Anions, pH, Competition, Adsorption, Manganese, Goethite

? Echeverria, J., Morera, T. and Garrido, J. (1999), Metal-induced chromium(VI) sorption by two calcareous soils. *Australian Journal of Soil Research*, **37** (3), 431-443.

Full Text: [1999\Aus J Soi Res37, 431.pdf](1999/Aus%20J%20Soi%20Res37,%20431.pdf)

Abstract: Competing anions, notably SO42- and H2PO4-, reduce Cr(VI) sorption; however, the role of cooperative cations in Cr(VI) retention has merited less attention. This research studied the erect of Cd, Cu, Ni, and Zn on sorption of Cr(VI) in 2 calcareous soils: Calcixerollic Xerochrept (CX) and Paralithic Xerorthent (PX). Sorption kinetics and isotherms were combined with sequential extractions and fractional factorial designs. Most cation sorption took place during the first hour, whereas sorption of Cr(VI) was slower. Without the cooperative presence of these cations, no sorption of Cr(VI) was detected in the range 0-0.35 mM. Cd, Cu, Ni, and Zn augmented the sorption of Cr(VI) by the calcareous soils; however, in both soils the amount of Cr(VI) retained was much lower than cation sorption. In the presence of cation, sorption of Cr(VI) was first observed at an equilibrium concentration of 0.07 mM for the CX soil and 0.17 mM for the PX soil. For higher concentrations, sorption of Cr(VI) by both soils was described by a constant distribution isotherm. More than 80% of Cr(VI) sorbed by soils was extracted as a non-exchangeable fraction using the Tessier et al. sequential procedure. Fractional factorial designs indicated that although the 4 cations favoured sorption of Cr(VI), Cu had the greatest positive influence.

Keywords: Cr(VI) Sorption, Sorption Isotherms, Sequential Extractions, Fractional Factorial Designs, Adsorption, Chromate, Speciation, Behavior, Cadmium, Copper, Ions, pH

Ghadiri, H., Connell, D. and Parker, R. (2000), Sorption-desorption and column leaching of strychnine with soil. *Australian Journal of Soil Research*, **38** (3), 603-616.

Full Text: [2000\Aus J Soi Res38, 603.pdf](2000/Aus%20J%20Soi%20Res38,%20603.pdf)

Abstract: Sorption-desorption of rodenticide strychnine by soil and its leaching through soil columns were studied on 4 typical soils of south-east Queensland. All 4 soils showed a high tendency to sorb strychnine, with the sorption rate higher for clay soils. The sorption capacities of the 4 soils are in the order Kingsthorpe > Warra > Oakey > Roma, which is also the order of decline in their clay contents. The desorption process also closely followed the clay content of the 4 soils. The 2 clay soils of Kingsthorpe and Warra not only sorbed a higher proportion of the applied strychnine at any application rate, they also showed a greater resistance to releasing their sorbed strychnine compared with the 2 silty clay loam soils. The effects of pH and organic matter content on the sorption-desorption of strychnine were inconclusive due to the dominant influence of clay content and the narrow range of these characteristics provided by the soils under investigation. The 2 clay soils of Kingsthorpe and Warra required a significantly higher number of pore volumes of leaching solution to pass through their respective columns for the concentration of strychnine in the effluent to approach that of the leaching solution, compared with the 2 silty clay soils of Oakey and Roma. The pore volumes of the leaching solution necessary for this point to be reached were not in the order of their clay contents, but when the cumulative volume of solution was used instead of the pore volume, the trend followed the clay content of the soils closely. Pore volume may not be an appropriate characteristic for assessing the leachability of strychnine through soil columns when the soil’s clay fraction is of an expanding type, as it is the case for Kingsthorpe soil. NO desorption or leaching of strychnine took place in any of the 4 soils aged with a range of strychnine concentrations.

Keywords: Rodenticide, Rodenticide, Water Solubility, Degradation, Absorption

# Title: Australian Library Journal

Full Journal Title: Australian Library Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Smith, J. (2009), The evidence base: where is it? *Australian Library Journal*, **58** (1), 28-38.

Full Text: [2009\Aus Lib J58, 28.pdf](2009/Aus%20Lib%20J58,%2028.pdf)

Abstract: In criminal justice, as in many other areas of public administration, politicians and managers increasingly call for evidence-based policy (EBP). This should raise questions about what evidence, who will find it and how will it be used. The rising emphasis on bibliometrics as the way to measure importance and impact is another development that should raise questions about what is being measured and how it will be used. The academic research publication model does not fit all aspects of criminology very well, where much work is done by or for government and non-government organisations, and much is multidisciplinary. This grey literature has always presented problems in meeting standards for peer-reviewed, evidence-based evaluation, but is often all there is - if it can be found. Funding agencies may have stringent requirements for evaluation studies, but how are these reports written or structured and what happens to them? How can they be used to inform subsequent practice?

Keywords: Academic, Administration, Bibliometrics, Criminology, Development, Evaluation, Evaluation Studies, Evidence, Evidence Based, Evidence-Based, Government, Impact, Justice, Literature, Managers, Measure, Meeting, Model, Multidisciplinary, Peer-Reviewed, Policy, Politicians, Practice, Public, Publication, Research, Standards, Work

? Morrison, I. (2009), Documentation: A history and critique of attribution, commentary, glosses, marginalia, notes, bibliographies, works-cited lists, and citation indexing and analysis. *Australian Library Journal*, **58** (3), 329-330

Full Text: [2009\Aus Lib J58, 329.pdf](2009/Aus%20Lib%20J58,%20329.pdf)

Keywords: Citation, History, Indexing

? Smith, J. (2011), The evidence base: Where is it? *Australian Library Journal*, **60** (4), 350-356.

Full Text: [2011\Aus Lib J60, 350.pdf](2011/Aus%20Lib%20J60,%20350.pdf)

Abstract: In criminal justice, as in many other areas of public administration, politicians and managers increasingly call fur evidence-based policy (F,BP). This should raise questions about what evidence, who will find it and how will it be used. The rising emphasis on bibliometrics as the way to measure importance and impact is another development that should raise questions about what is being measured and how it will be used. The academic research publication model does not fit all aspects of criminology very well, where much work is done by or for government and non-government organisations, and much is multidisciplinary. This grey literature has always presented problems in meeting standards for peer-reviewed, evidence-based evaluation, hut is often all there is - if it can be found. Funding agencies may have stringent requirements for evaluation studies, but how are these reports written or structured and what happens to them? How can they he used to inform subsequent practice?

Keywords: Bibliometrics, Criminology, Development, Evaluation, Evaluation Studies, Funding, Impact, Literature, Model, Policy, Practice, Publication, Research, Standards

# Title: Australian and New Zealand Journal of Criminology

Full Journal Title: Australian and New Zealand Journal of Criminology

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Ogilvie, J. and Stewart, A. (2010), The integration of rational choice and self-efficacy theories: A situational analysis of student misconduct. *Australian and New Zealand Journal of Criminology*, **43** (1), 130-155.

Full Text: [2010\Aus New Zea J Cri43, 130.pdf](2010/Aus%20New%20Zea%20J%20Cri43,%20130.pdf)

Abstract: Research on the causes of student misconduct in higher education has largely overlooked the values of integrating individual and situational perspectives to structure empirical examinations. Such research has important implications for the prevention and management of academic misconduct by higher education institutions. In this study, perceptual deterrence (Piquero & Pogarsky, 2002; Stafford & Warr, 1993) and self-efficacy (Bandura, 1997) theories were adopted to model the impact of situational factors and individual differences on students’ intentions to engage in plagiarism. A questionnaire using a scenario method and manipulating the situational deterrence variables of the certainty and severity of sanctions was administered to 536 undergraduate university students. Analysis of covariance results indicated that the objective manipulations of the certainty and severity of sanctions had no effect on intentions to engage in plagiarism. However, Tobit regression results indicated that both situational perceptions of costs and benefits, and academic self-efficacy were significant predictors of intentions to engage in plagiarism. Furthermore, academic self-efficacy was found to moderate the effects of deterrence perceptions on intentions to engage in plagiarism. The results highlight the significance of the interaction between situational and individual characteristics on decisions to engage in deviant behaviour. Implications for the management of misconduct in higher education institutions are discussed.

Keywords: Academic Dishonesty, Academic Misconduct, Beliefs, Cheating Behavior, Contextual Influences, Crime, Decision-Making, Deterrence, Education, Individual-Differences, Model, Perceptual Deterrence Theory, Plagiarism, Prevention, Questionnaire, Rational Choice, Research, Sanction Threats, Self-Efficacy

# Title: Australian and New Zealand Journal of Family Therapy

Full Journal Title: [Australian and New Zealand Journal of Family Therapy](http://www.atypon-link.com/AAP/loi/anft)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0814-723X

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? McDonald, E. (2008), Art, science and curiosity: Research and research methodologies in Australian family therapy 1979-2000. *Australian and New Zealand Journal of Family Therapy*, **29** (3), 122-132.

Full Text: [2008\Aus New Zea J Fam The29, 122.pdf](2008/Aus%20New%20Zea%20J%20Fam%20The29,%20122.pdf)

Abstract: This article presents an historical analysis of the development of research and research methodologies in an Australian context. The Australian and New Zealand Journal of Family Therapy was chosen as the site of the analysis. The first section of data consists of the articles that represent themselves as ‘research’ in the period from 1979 (the journal’s inception) to 2000. These texts have been analysed using bibliometric analysis. The second section of data consists of commentary articles about research in family therapy. This data has been analysed using discourse analysis. Overall, I have been interested in how family therapists have defined. ‘research’; how family therapists have chosen to inquire; representations of the researcher in Australian family therapy; associations between theoretical or clinical developments and the methodologies that have been chosen for inquiries. Findings from the study reveal very limited representations of research in the journal for the period under review, and an apparent struggle for family therapists to undertake a discussion about what research actually is. Questions are raised around how this has occurred, and some ideas are presented as to how research knowledges can be included in debates around theory diversity in family therapy.

Keywords: Analysis, ANZJFT, Attitudes to Research, Australian, Bibliometric, Bibliometric Analysis, Clinical, Context, Data, Development, Discourse, Discourse Analysis, Diversity, Family, Family Therapy, First, First Section, Historical Analysis, Journal, Methodologies, New Zealand, Research, Research Methodologies, Review, Science, Site, Theory, Therapy

# Title: Australian and New Zealand Journal of Psychiatry

Full Journal Title: [Australian and New Zealand Journal of Psychiatry](http://www3.interscience.wiley.com/journal/118579537/home); [Australian and New Zealand Journal of Psychiatry](http://web.ebscohost.com/ehost/detail?vid=1&hid=5&sid=4b447d4b-545e-4955-b82d-0d1dd198f072%40sessionmgr10&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=a9h&jid=7ZU)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

Bloch, S. and Walter, G. (2001), The impact factor: Time for change. *Australian and New Zealand Journal of Psychiatry*, **35** (5), 563-568.

Full Text: [2001\Aus New Zea J Psy35, 563.pdf](2001/Aus%20New%20Zea%20J%20Psy35,%20563.pdf)

Abstract: Objective: The Impact Factor (IF) has received virtually no attention in the psychiat ric literature, despite its long-term use, expanding influence and evidence of misapplication. We examine the IF’s validity as a measure of a paper’s scientific worth, and consider alternative ways to conduct such an appraisal.

Method: We explored medical databases and websites, and conferred with acknowledged experts on the subject.

Results: Irremediable problems, both conceptual and technical, make the IF a flawed measure. The notion that citations vouch for the quality of an article is questionable. Moreover, the IF’s vulnerability to misuse in domains such as academic promotion and research grant assessment is a serious development.

Conclusion: The IF (and all measures derived from it) should be abandoned. A ‘return to basics’ in evaluating published work is overdue. As seductive as a simple formula is to assess quality, shortcuts are unavailable and unlikely to be useful. Publishing a short-list of papers annually, judged as objectively as possible by peers to merit special attention, may be a more meaningful option. Conceivably, every psychiatric journal could participate in this cyclical exercise, leading to a ‘grand short-list’. This could be made readily available to all professionals, both researchers and clinicians, by being posted on a suitable website. Since peer review has a long-standing role in scientific publishing, our proposal is essentially an extension of that process.

? Bloch, S. (2002), ‘And the winners are’: the top articles of 2001. *Australian and New Zealand Journal of Psychiatry*, **36** (2), 157.

Full Text: [2002\Aus New Zea J Psy36, 157.pdf](2002/Aus%20New%20Zea%20J%20Psy36,%20157.pdf)

Keywords: Articles

? Bloch, S. (2003), ‘And the winners are’: the top articles of 2002 and introducing Manuscript Central. *Australian and New Zealand Journal of Psychiatry*, **37** (3), 255-256.

Full Text: [2003\Aus New Zea J Psy37, 255.pdf](2003/Aus%20New%20Zea%20J%20Psy37,%20255.pdf)

Keywords: Articles, Jun

? Hickie, I.B., Christensen, H., Davenport, T.A. and Luscombe, G.M. (2005), Can we track the impact of Australian mental health research? *Australian and New Zealand Journal of Psychiatry*, **39** (7), 591-599.

Full Text: [2005\Aus New Zea J Psy39, 591.pdf](2005/Aus%20New%20Zea%20J%20Psy39,%20591.pdf)

Abstract: Objective: Arguments are being made to increase research and development funding for mental health research in Australia. Consequently, the methods used to measure the results of increased investment require review. This study aimed to describe the status of Australian mental health research and to propose potential methods for tracking changes in research output. Specifically, we describe the research output of nations, Australian states, Australian and New Zealand institutions and Australian and New Zealand researchers using citation rates. Method: Information on research output was sourced from two international databases (Institute for scientific information [ISI] Essential Science Indicators and ISI Web of Science) and the ISI list of Highly Cited Researchers. Results: In an international setting, Australia does not perform as well as other comparable countries such as New Zealand or Canada in terms of research output. Within Australia, the scientific performance of institutions apparently relates to the strength of some individual researchers or consolidated research groups. Highly cited papers are evident in the fields of syndrome definition, epidemiology and epidemiological methods, cognitive science and prognostic or longitudinal studies. Conclusions: Australian researchers need to consider the success of New Zealand and Canadian researchers, particularly given the relatively low investment in health and medical research in New Zealand. Although citation analyses are fraught with difficulties, they can be effectively complemented by other measures of responsiveness to clinical or population needs and community expectations and should be conducted regularly and independently to monitor the status of Australian mental health research.

Keywords: Burden, Citation, Citations, Depression, Mental Health, Publications, Research, Research Output, Research Priorities, Research Success

? Bloch, S. (2005), And the winners are: the top articles of 2004 (vol 39, pg 648, 2005). *Australian and New Zealand Journal of Psychiatry*, **39** (11-12), 1051.

Full Text: [2005\Aus New Zea J Psy39, 1051.pdf](2005/Aus%20New%20Zea%20J%20Psy39,%201051.pdf)

Keywords: Articles

? Hyett, M. and Parker, G. (2009), Can the highly cited psychiatric paper be predicted early? *Australian and New Zealand Journal of Psychiatry*, **43** (2), 173-176.

Full Text: 2009\Aus New Zea J Psy43, 173.pdf

Abstract: Objective: Predicting the impact of any research article on its scientific discipline is often viewed as requiring the passage of time. A recent BMJ article, however, reported that an article’s citation rate at 2 years could be predicted by data available 3 weeks following publication. The question remains as to whether establishing a citation trajectory at an early stage holds for psychiatric publications, given the low percentage of psychiatric articles in their analysis. The aim of the current article was to critically examine this area of the scientific literature. Method: Data were collected from the Institute for Scientific Information on scientific papers published in January/February 2006, in the top 30 psychiatric journals. Analyses examined the comparative impact of early citation numbers and several predictors identified in the BMJ article. Results: Only two BMJ variables (a larger number of references per article and larger number of authors) predicted higher citations at 2 years in the principal analysis. Citation counts at 1, 3, 6 and 12 months predicted citations at 2 years, with increasing success over time, and such citation counts were distinctly superior to the quantified variables in the previous study. Conclusions: It appears doubtful that data available at 3 weeks after publication for psychiatric articles are useful in predicting citation counts at 2 years. The trajectory of citation counts for a psychiatric article becomes more apparent with time.

Keywords: Authors, Citation, Citations, Comparative Study, Forecasting, Impact, Journals, Literature, Papers, Psychiatry Journals, Publication, Publications, Research

? Douglas, K.M. and Porter, R.J. (2009), Longitudinal assessment of neuropsychological function in major depression. *Australian and New Zealand Journal of Psychiatry*, **43** (12), 1105-1117.

Full Text: 2009\Aus New Zea J Psy43, 1105.pdf

Abstract: Neuropsychological impairment is a core component of major depression, yet its relationship to clinical state is unclear. The aims of the present review were to determine which neuropsychological domains and tasks were most sensitive to improvement in clinical state in major depression and to highlight the methodological issues in such research. Studies that included a baseline and at least one follow-up neuropsychological testing session in adults with major depression were identified using MEDLINE, Web of Science and ScienceDirect databases. Thirty studies were included in the review. Findings in younger adult populations suggested that improvement in mood was most strongly related to improved verbal memory and verbal fluency, while measures of executive functioning and attention tended to remain impaired across treatment. In late-life major depression, improved psychomotor speed was most closely related to treatment response, but there was much inconsistency between study findings, which may be due to methodological issues. In major depression, particular neuropsychological domains are more strongly related to clinical state than others. The findings from the present review suggest that the domains most sensitive to clinical state are verbal learning and memory, verbal fluency and psychomotor speed. In contrast, measures of attention and executive functioning perhaps represent more trait-like markers of major depression. With further methodologically sound research, the changes in neuropsychological function associated with treatment response may provide a means of evaluating different treatment strategies in major depression.

Keywords: Adult, Adults, Antidepressant Treatment, Assessment, Attention, Cognitive Impairment, Databases, Depression, Executive Function, Executive Functions, Facial Expressions, Follow-up, Geriatric Depression, Healthy-Volunteers, Hippocampal Volume, Late-Life Depression, Learning, Major Depression, Major Depressive Disorder, Medline, Memory, Mood, Neurocognitive Impairment, Neuropsychological Function, Psychomotor, Remission, Research, Review, Science, Treatment, Unipolar Depression, Web of Science

? Bourke, C., Douglas, K. and Porter, R. (2010), Processing of facial emotion expression in major depression: A review. *Australian and New Zealand Journal of Psychiatry*, **44** (8), 681-696.

Full Text: 2010\Aus New Zea J Psy44, 681.pdf

Abstract: Processing of facial expressions of emotion is central to human interaction, and has important effects on behaviour and affective state. A range of methods and paradigms have been used to investigate various aspects of abnormal processing of facial expressions in major depression, including emotion specific deficits in recognition accuracy, response biases and attentional biases. The aim of this review is to examine and interpret data from studies of facial emotion processing in major depression, in the context of current knowledge about the neural correlates of facial expression processing of primary emotions The review also discusses the methodologies used to examine facial expression processing. Studies of facial emotion processing and facial emotion recognition were identified up to December 2009 utilizing MEDLINE and Web of Science. Although methodological variations complicate interpretation of findings, there is reasonably consistent evidence of a negative response bias towards sadness in individuals with major depression, so that positive (happy), neutral or ambiguous facial expressions tend to be evaluated as more sad or less happy compared with healthy control groups. There is also evidence of increased vigilance and selective attention towards sad expressions and away from happy expressions, but less evidence of reduced general or emotion-specific recognition accuracy. Data is complicated by the use of multiple paradigms and the heterogeneity of major depression. Future studies should address methodological problems, including variations in patient characteristics, testing paradigms and procedures, and statistical methods used to analyse findings.

Keywords: Accuracy, Affective-Disorders, Antidepressant Drug-Action, Attention, Bias, Bipolar Disorder, Control, Control Groups, Correlates, Depression, Emotion, Faces, Facial Emotion Processing, Happy, Human, Human Amygdala, Impaired Recognition, Interpretation, Knowledge, Major Depression, Medline, Neural Responses, Neuropsychological Functioning, Perception, Primary, Review, Sad, Science, Statistical, Statistical Methods, Web of Science

? Sarris, J., LaPorte, E. and Schweitzer, I. (2011), Kava: A comprehensive review of efficacy, safety, and psychopharmacology. *Australian and New Zealand Journal of Psychiatry*, **45** (1), 27-35.

Full Text: 2011\Aus New Zea J Psy45, 27.pdf

Abstract: Overview: Kava (Piper methysticum) is a South Pacific psychotropic plant medicine that has anxiolytic activity. This effect is achieved from modulation of GABA activity via alteration of lipid membrane structure and sodium channel function, monoamine oxidase B inhibition, and noradrenaline and dopamine re-uptake inhibition. Kava is available over the counter in jurisdictions such as the USA, Australia and New Zealand. Due to this, a review of efficacy, safety and clinical recommendations is advised. Objective: To conduct a comprehensive review of kava, in respect to efficacy, psychopharmacology, and safety, and to provide clinical recommendations for use in psychiatry to treat generalized anxiety disorder (GAD). Methods: A review was conducted using the electronic databases MEDLINE, CINAHL, PsycINFO and the Cochrane Library during mid 2010 of search terms relating to kava and GAD. A subsequent forward search was conducted of key papers using Web of Science cited reference search. Results: The current weight of evidence supports the use of kava in treatment of anxiety with a significant result occurring in four out of six studies reviewed (mean Cohen’s d = 1.1). Safety issues should however be considered. Use of traditional water soluble extracts of the rhizome (root) of appropriate kava cultivars is advised, in addition to avoidance of use with alcohol and caution with other psychotropic medications. Avoidance of high doses if driving or operating heavy machinery should be mandatory. For regular users routine liver function tests are advised. Conclusions: While current evidence supports kava for generalized anxiety, more studies are required to assess comparative efficacy and safety (on the liver, cognition, driving, and sexual effects) versus established pharmaceutical comparators.

Keywords: Aboriginal Community, Alcohol, Anxiety, Binding-Site, Cochrane, Cognition, Cognitive Performance, Databases, Disorder, Driving, Efficacy, Enriched Extract, Event-Related Potentials, Generalized Anxiety Disorder, Generalized Anxiety Disorder, Herbal Medicine, In-Vitro, Kava, Lipid, Mandatory, Medicine, Medline, Methods, Na+-Channels, New Zealand, Noradrenaline, Papers, Piper Methysticum, Piper-Methysticum, Placebo, Plant, Psychiatry, Review, Safety, Science, Traditional, Treatment, Web of Science

? Hunt, G.E., Walter, G., Soh, N., Cashman, E. and Malhi, G.S. (2011), ‘Patting your head while rubbing your tummy’. *Australian and New Zealand Journal of Psychiatry*, **45** (6), 444-448.

Full Text: 2011\Aus New Zea J Psy45, 444.pdf

Keywords: Impact-Factor, Mental-Health, Psychiatric-Disorders, National-Survey, Top Articles, Key Findings, Schizophrenia, Prevalence, Citations, Australia

# Title: Australian and New Zealand Journal of Public Health

Full Journal Title: Australian and New Zealand Journal of Public Health

ISO Abbreviated Title: Aust. N. Z. J. Public Health

JCR Abbreviated Title: Aust N Z J Public Health

ISSN: 1326-0200

Issues/Year:

Journal Country/Territory:

Language:

Publisher: Public Health Assoc Australia Inc, Canberra

Publisher Address:

Subject Categories:

: Impact Factor

? Diesendorf, M., Colquhoun, J., Spittle, B.J., Everingham, D.N. and Clutterbuck, F.W. (1997), New evidence on fluoridation. *Australian and New Zealand Journal of Public Health*, **21** (2), 187-190.

Full Text: [1997\Aus New Zea J Pub Hea21, 187.pdf](1997/Aus%20New%20Zea%20J%20Pub%20Hea21,%20187.pdf)

Abstract: A review of recent scientific literature reveals a consistent pattern of evidence-hip fractures, skeletal fluorosis, the effect of fluoride on bone structure, fluoride levels in bones and osteosarcomas-pointing to the existence of causal mechanisms by which fluoride damages bones. In addition, there is evidence, accepted by some eminent dental researchers and at least one leading United States proponent of fluoridation, that there is negligible benefit from ingesting fluoride, and that any (small) benefit from fluoridation comes from the action of fluoride at the surface of the teeth before fluoridated water is swallowed. Public health authorities in Australia and New Zealand have appeared reluctant to consider openly and frankly the implications of this and earlier scientific evidence unfavourable to the continuation of the fluoridation of drinking water supplies.

Keywords: Hip Fracture, Water Fluoridation, Sodium-Fluoride, Dental Benefit, Tooth-Decay, Bone, Caries, Women, Osteoporosis, Prevalence

Spencer, A.J. (1998), New, or biased, evidence on water fluoridation? *Australian and New Zealand Journal of Public Health*, **22** (1), 149-154.

Full Text: [1998\Aus New Zea J Pub Hea22, 149.pdf](1998/Aus%20New%20Zea%20J%20Pub%20Hea22,%20149.pdf)

Abstract: The recent review, ‘New evidence on fluoridation’, by Diesendorf, Colquhoun, Spittle, Everingham and Clutterbuck (Aust N Z J Public Health 1997; 21: 187-90) claims a consistent pattern of evidence pointing to fluoride damaging bone, a negligible benefit in dental caries reduction from ingested fluoride, and any small benefit from fluoride coming from the action of fluoride at the tooth surface. Public health authorities are allegedly reluctant to pursue such evidence. In the interest of scholarly debate, invited by Diesendorf et al., this reaction paper examines six separate areas raised in the original paper: fluoridation and hip fracture; fluoridation and osteosarcomas; pre-eruptive and posteruptive benefits in dental caries reduction; fluoride ingestion; benefit in dental caries reduction for contemporary Australian children; and bias of health authorities and responsible science. Numerous examples of bias in the identification, selection and appraisal of the evidence on water fluoridation presented by Diesendorf et al. are developed. Further, this reaction paper puts forward both studies and appraisal indicating that water fluoridation should continue to be regarded as a safe and effective public health measure.

Keywords: Dental-Caries, Drinking-Water, Hip Fracture, Western Australia, Exposure, Experience, Fluorosis, Health, States, Rates

Pilotto, L.S., Kliewer, E.V., Davies, R.D., Burch, M.D. and Attewell, R.G. (1999), Cyanobacterial (blue-green algae) contamination in drinking water and perinatal outcomes. *Australian and New Zealand Journal of Public Health*, **23** (2), 154-158.

Full Text: [1999\Aus New Zea J Pub Hea23, 154.pdf](1999/Aus%20New%20Zea%20J%20Pub%20Hea23,%20154.pdf)

Abstract: OBJECTIVE: The aim of this ecological study was to examine the relationship between potential cyanobacterial exposure through drinking water during pregnancy and birth outcomes.

METHOD: One hundred and fifty-six communities in South-Eastern Australia were involved, providing 32, 700 singleton live newborn during the period 1992-94. Cyanobacterial occurrence and cell density (alert level) in drinking water sources during the first trimester, the total gestational period for premature births or limited to 36 weeks in term infants, and the last 12 weeks prior to preterm births or up to and including 36 weeks in term infants were used as estimates of exposure.

RESULTS: There were statistically significant differences between the proportion of time during the first trimester with cyanobacterial occurrence and the percentage of births that were low birth weight (LBW) and very low birth rate (VLBW). Significant differences were also found, among various categories of first trimester exposure based on average cell density and LBW, prematurity and congenital defects. However, the pattern of these results does not suggest a causal link to cyanobacteria. There were no clear dose-response relationships. Analyses based on exposure during the last 12 weeks and total gestation also showed no significant dose-response effects.

CONCLUSION: The results of this study provide no clear evidence for an association between cyanobacterial contamination of drinking water sources and adverse pregnancy outcomes.

Sladden, T., Beard, J., Simpson, J. and Luckie, K. (1999), Population health environmental indicators: Ecologic monitoring of environment-related health and disease trends. *Australian and New Zealand Journal of Public Health*, **23** (5), 486-493.

Full Text: [1999\Aus New Zea J Pub Hea23, 486.pdf](1999/Aus%20New%20Zea%20J%20Pub%20Hea23,%20486.pdf)

Abstract: BACKGROUND: Current State of the Environment (SoE) reporting focuses primarily on indicators directly related to the physical environment such as climate, and air, water and soil quality. As the environment has both direct and indirect effects on human health, an opportunity exists to include environment-related human disease indicators as an SoE indicator theme.

OBJECTIVE: To develop a set of population health environmental indicators (PHEIs, phi s) that can illustrate environment-related disease (ERD) trends at the population level.

METHODS: A literature review was conducted on environmental health monitoring and the current knowledge of environmental effects on human health. Key PHEIs were identified and routine health data collections accessed and analysed to illustrate temporal and geographic trends.

RESULTS: Diseases with an environmental aetiology are tabulated and examples are given of the type and range of PHEIs that can be developed for an Australian geographic area.

CONCLUSIONS: Illustrating environmental degradation in terms of resultant human diseases is a potent tool for promoting environmental protection measures. This paper examines a range of PHEIs that may be used as indicators of both environmental disease and environmental quality. IMPLICATIONS: PHEIs could be developed as a useful SoE indicator theme, and as a tool to help foster the convergence which is occurring between environmental health and public health fields.

? Smith, D.R. (2007), Journal impact factors: What do they mean for public health? *Australian and New Zealand Journal of Public Health*, **31** (6), 581-582.

Full Text: [2007\Aus New Zea J Pub Hea31, 581.pdf](2007/Aus%20New%20Zea%20J%20Pub%20Hea31,%20581.pdf)

Keywords: Bibliometric Analysis, Fields, Preventive Medicine

? Yuen, A., Sugeng, Y., Weiland, T.J. and Jelinek, G.A. (2010), Lifestyle and medication interventions for the prevention or delay of type 2 diabetes mellitus in prediabetes: A systematic review of randomised controlled trials. *Australian and New Zealand Journal of Public Health*, **34** (2), 172-178.

Abstract: Objective: To assess lifestyle and pharmacological interventions aiming to delay type 2 diabetes mellitus (T2DM) in prediabetes Methods: We searched the Cochrane Register of Controlled Trials, MEDLINE, EMBASE, CINAHL, PsycINFO, Web of Science, BIOSIS and LILACS databases, examined reference lists and contacted authors We included randomised controlled trials (RCTs) on both lifestyle and medication interventions in prediabetes These studies were at least 12 month duration and aimed to delay T2DM Results: Four studies investigating lifestyle and medication with a total of 5.196 participants were identified There was a high risk of bias in the studies and the interventions utilised varied considerably, thus, meta-analysis was not undertaken The comparison between lifestyle and medication interventions was largely dependent on the intensity of the lifestyle program while we could not adequately assess their effects on cardiovascular morbidity Adverse events with metformin and acarbose were common Conclusion: There is substantial evidence that intensive lifestyle programs and medications delay T2DM in impaired glucose tolerance though it remains unclear which is more effective Implications: Both interventions seem to be able to delay T2DM However, both have issues with adherence and side effects and more RCTs are required.

Keywords: Adherence, Authors, Bias, Cardiovascular, Cochrane, Databases, Diabetes, Diabetes Mellitus, EMBASE, Fasting Glucose, Impaired Glucose-Tolerance, Individuals, Insulin-Secretion, Interventions, Lifestyle Intervention, Medication, Medline, Meta-Analysis, Metformin, Methods, Morbidity, Pharmacological Intervention, Physical-Activity, Prediabetic State, Prevention, Prevention And Control, Program, Reduction, Review, Risk, Science, Systematic, Systematic Review, Type 2, Type 2 Diabetes, Type 2 Diabetes Mellitus, Web of Science, Weight-Loss

# Title: Australian & New Zealand Journal of Statistics

Full Journal Title: [Australian & New Zealand Journal of Statistics](http://www.blackwell-synergy.com/loi/anzs)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1369-1473

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Seneta, E. (2002), In memoriam - Emeritus professor Henry Oliver Lancaster, AO FAA 1 February 1913-2 December 2001. *Australian & New Zealand Journal of Statistics*, **44** (4), 385-400.

Full Text: [2002\Aus New Zea J Sta44, 38.pdf](2002/Aus%20New%20Zea%20J%20Sta44,%2038.pdf)

Abstract: The death, in Sydney, of Oliver Lancaster marks the end of an era in the histories of the Statistical Society of Australia, which (in its previous existence as the Statistical Society of New South Wales) he helped found in 1947, and of the Australian Journal of Statistics of which he was founding editor (1959-71). Oliver Lancaster was Foundation Professor of Mathematical Statistics at the University of Sydney (1959-1978), where he spent his life as student and academic. During his academic career, he achieved scholarly distinction in at least four fields: mathematical statistics, medical and public health statistics, the history of medicine and of statistics, and statistical bibliography. With E.J.G. Pitman (1897-1993), M.H. Belz (1897-1975), E.A. Cornish (1909-1973) and PAR Moran (1917-1988) he was part of a cohort of renowned Australian mathematical statisticians who laid the foundation of the glory days of Australian mathematical statistics. This obituary and tribute focuses on some of these aspects, within a broader historical picture.

Keywords: Australian Journal of Statistics, Characterization, Chi-Squared, History of Statistics, Lancaster’S MID-P, Mathematical Statistics, Medical Statistics, Normal Distribution, Statistical Society of Australia, University of Sydney

# Title: Australian and New Zealand Journal of Surgery

Full Journal Title: Australian and New Zealand Journal of Surgery

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 0004-8682

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Kee, W.D.N., Roach, V.J. and Lau, T.K. (1997), How accurate are references in the *Australian and New Zealand Journal of Surgery*? *Australian and New Zealand Journal of Surgery*, **67** (7), 417-419.

Full Text: [1997\Aus New Zea J Sur67, 417.pdf](1997/Aus%20New%20Zea%20J%20Sur67,%20417.pdf)

Abstract: Background: The accuracy of reference citations in The Australian and New Zealand Journal of Surgery was evaluated. All of the references from 1995 (Volume 65) were included (n = 4092).

Methods: A sample of 100 references was randomly selected and examined in detail by comparison with the original references.

Results: Overall, 60% of citations contained errors. Errors were categorized by dividing references into six elements. A total of 38.8% of citations contained an error in one element, 15.6% contained errors in two elements, 4.4% contained errors in three elements, and 4.4% contained errors in four elements of the reference. The most common errors were errors of authors’ names and errors in the title.

Conclusions: Contributors to this journal should take more care in checking references in their manuscripts before publication.

Keywords: Documentation, Publications, Anesthesia

Beasley, S.W. (2000), The value of medical publications: ‘To read them would … burden the memory to no useful purpose’. *Australian and New Zealand Journal of Surgery*, **70** (12), 870-874.

Full Text: [2000\ANZ J Sur70, 870.pdf](2000/ANZ%20J%20Sur70,%20870.pdf)

Abstract: In 1782 William Black published his *Historical Sketch of Medicine and Surgery*, in which he addressed the subject of medical publications and their value. He doubted whether even one physician in a thousand managed to add ‘one iota of information to the medical fund’ and whether more than a tiny fraction of medical publications over the centuries had contained ‘any material discovery for useful improvement’ in medical knowledge. The debate on the value of published material and the explosion of medical publication continues: the National Library of Medicine search service now has access to 9 million articles on MEDLINE, from 3900 current medical journals. Easy identification and retrieval of relevant and worthwhile information remain major obstacles for the clinician despite advances in electronic information systems. Black’s concerns about medical publications, concerns that echoed the more general doubts of philosopher Voltaire quoted in the title, appear to be timeless.

# Title: Australian Psychologist

Full Journal Title: Australian Psychologist

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN: 1742-7835

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Over, R. (1981), Bibliometric profile of Australian psychologist. *Australian Psychologist*, **16** (3), 433-435.

Keywords: Bibliometric

# Title: Australian Veterinary Journal

Full Journal Title: Australian Veterinary Journal

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Racklyeft, D.J., Raidal, S. and Love, D.N. (2000), Towards an understanding of equine pleuropneumonia: Factors relevant for control. *Australian Veterinary Journal*, **78** (5), 334-338.

Full Text: [2000\Aus Vet J78, 334.pdf](2000/Aus%20Vet%20J78,%20334.pdf)

Abstract: Objective To review relevant literature on factors associated with the development of equine pleuropneumonia Design A review of the literature using a range of databases including Current Contents, Medline, ChemAbstracts, Biological Abstracts and CAB and a comprehensive search strategy which involved use of keywords, author and subject category searches. Additional sources included review of articles cited by key accumulated references. Results Since the early years of this century, many of the “gaps” in our knowledge of the pathogenesis of this disease have been filled. We now know that equine pleuropneumonia results from contamination of the lower respiratory tract with bacteria similar to the normal oropharyngeal microbiota of the horse and that transportation of any mode, especially over long distances (and consequently with no or short rest periods), is the single most important predisposing factor for this disease. This is associated with restraint of horses such that they are unable to lower their heads, which leads to increased opportunity for lower respiratory tract contamination and a reduced opportunity for clearance. Strenuous exercise also results in lower respiratory tract contamination and exercise subsequent to transportation exerts additive detrimental effects on the defenses of the lower respiratory tract. Clinical Implications While modern veterinary medicine and surgery have significantly reduced the death rate from pleuropneumonia, horses that develop the disease have a high probability of not returning to their prior use. This under-scores the importance of developing the most effective strategies for its prevention.

Keywords: Anaerobes, Anaerobic Bacterial Pleuropneumonia, Bronchoalveolar Lavage Fluid, Contamination, Control, Databases, Development, Equine Pleuropneumonia, Exercise, Horses, Literature, Lower Respiratory Tract Defenses, Lower Respiratory-Tract, Lung, Normal, Pneumonia, Prevention, Review, Shipping Fever, Strategy, Thoroughbred Racehorses, Tract, Transport, Transport Sickness

# Title: Avian Diseases

Full Journal Title: [Avian Diseases](http://www.aaapjournals.info/loi/avdi)

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Maurer, J.J. (2007), The proper conduct of research. *Avian Diseases*, **51** (1), 1-7.

Full Text: [2007\Avi Dis51, 1.pdf](2007/Avi%20Dis51,%201.pdf)

Abstract: Scientific misconduct has garnered recent attention by the media over scandals concerning falsification and fabrication of data surrounding potentially promising breakthroughs in stem-cell research, allegations of plagiarism at a U.S. university, and financial conflicts of interest between researchers and drug companies. While this makes for interesting copy, discussion of scientific fraud provides an excellent opportunity to review ethical standards for research and examine the conflicts that confront researchers today. This review specifically focuses on five areas that involve scientific integrity plagiarism, falsification, fabrication, authorship, and conflict of interest-as well as nuances in each area that even senior investigators may not be aware of (e.g., self-plagiarism). The standards for ethical conductance of research discussed in this review are those set by many scientific, peer-reviewed journals and by federal and private granting agencies, and therefore it highlights the expectations and guidelines surrounding manuscript and grant submissions and review, and the consequences associated with violations. This review is intended to stimulate discussion among readers and assess what is necessary to become a good, competitive, but ethical researcher, especially in an era of shrinking financial resources for research.

Keywords: Authorship, Authorship, Conflict of Interest, Conflict-of-Interest, Data Fabrication, Jan 20 2006, Journals, Pg 335, Research, Research Fraud, Researchers, Retracted See, Science, Scientific Misconduct, Scientific Misconduct, Stem-Cells

# Title: Aviation Space and Environmental Medicine

Full Journal Title: Aviation Space and Environmental Medicine

ISO Abbreviated Title:

JCR Abbreviated Title:

ISSN:

Issues/Year:

Journal Country/Territory:

Language:

Publisher:

Publisher Address:

Subject Categories:

: Impact Factor

? Goswami, N., Loeppky, J.A. and Hinghofer-Szalkay, H. (2008), LBNP: Past protocols and technical considerations for experimental design. *Aviation Space and Environmental Medicine*, **79** (5), 459-471.

Abstract: introduction: Lower body negative pressure (LBNP) has been used for decades to simulate orthostatic stress and the effects of blood loss in humans. Since the definitive review of LBNP in 1974, new applications have been developed and research has revealed conflicting cardiovascular and neurohormonal responses during and after LBNP. Methods: A search of the literature was conducted for 1964-2007 using the Web of Science and the search terms “cardiovascular system,” “orthostasis,” “spaceflight,” and “methodologies” to identify publications in English that describe human studies where LBNP was used to simulate orthostasis. Publications cited in the earlier review were excluded, leaving a total of 215 articles for consideration. Results: We divided the reported protocols into eight categories based on the pressure, pattern, and duration of the stimulus: 1) mild, constant, short; 2) mild, constant, long; 3) mild, ramp, short; 4) mild, ramp, long; 5) moderate-to-strong, constant, short; 6) moderate, constant, long; 7) moderate-to-strong, ramp, short; and 8) strong, ramp, long. The review showed that these protocols stimulate different reflexes and can be used to produce particular responses. Discussion: Based on the review, we developed guidelines for using LBNP in a predictable and reproducible manner. Variables that must he controlled include subject characteristics, procedures, and environmental conditions as well as specifications for the LBNP chamber and seal positioning. An understanding of the many technical details of such experiments and the nature of elicited cardiovascular and neurohormonal responses is required to design optimal protocols to address specific research questions.

Keywords: Blood, Body Negative-Pressure, Cardiovascular, Cardiovascular-Responses, Carotid Baroreflex Control, Central Venous-Pressure, Countermeasures, Environmental, Guidelines, Head-Up-Tilt, Hemodynamic-Responses, Human, Humans, Improves Orthostatic Tolerance, Lbnp Methodology, Literature, Methods, Orthostasis, Pressure, Publications, Regional Vascular-Responses, Renin-Angiotensin System, Research, Review, Science, Skin Blood-Flow, Spaceflight, Stress, Web of Science

? da Costa, R.T., Sardinha, A. and Nardi, A.E. (2008), Virtual reality exposure in the treatment of fear of flying. *Aviation Space and Environmental Medicine*, **79** (9), 899-903.

Abstract: Background: Recently, a growing body of research has appeared on different aspects of virtual reality exposure (VRE) therapy applied to the treatment of anxiety disorders. The purpose of this article was to review with a systematic methodology the evidences that support the potential effectiveness of this therapy in the treatment of fear of flying (FOF), a problem that significantly affects patients’ social functioning and personal welfare. Methods: Potential studies were identified via computerized search using the PUBMED/Medline and Web of Science databases, and additional review of their references. Articles ranged from 1969 to 2007 and the keywords used in the search were: “virtual reality” and “fear of flying”; “virtual reality” and “flying phobia”; or “virtual reality” and “flight phobia.” Results: There were 40 studies using VRE in the treatment of FOF identified, mostly on the effectiveness of VRE therapy in group and case studies. Several components of the treatment protocols differed among the studies, which made the results comparison a challenging task. Nevertheless, controlled studies demonstrate that VRE treatment is effective with or without cognitive behavior therapy (CBT) and/or psychoeducation and that it is considered to be an effective component of the treatment of FOF. Conclusions: All studies that used cognitive and relaxation techniques in addition to VRE treatment were effective. More randomized clinical trials are required in which VRE therapy could be compared with standard exposure therapy. Thus, we suggest that CBT, psychoeducation, and VRE could be combined to treat FOF.

Keywords: 3-Year Follow-up, Acrophobia, Anxiety, Anxiety Disorders, Articles, Behavior Therapy, Case Studies, Clinical Trials, Cognitive-Behavioral Treatment, Controlled Studies, Databases, Effectiveness, Environments, Flying Phobia, Group Therapy, In-Vivo, Information, Methodology, Methods, Phobia, Psychotherapy, Randomized Clinical Trials, Research, Review, Science, Social, Systematic, Therapy, Treatment, Virtual Reality, Web of Science

# Title: Aviation Week & Space Technology

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Language: English

Publisher: Mcgraw Hill Inc

Publisher Address: 1221 Avenue of the Americas, New York, NY 10020

Subject Categories:

Engineering, Aerospace: Impact Factor 0.032, / (2001)

? Phillips, E.H. (2003), Red ink at Continental - Fears of war, terrorism and SARS torpedo financial performance. *Aviation Week & Space Technology*, **158** (16), 56-58.

Full Text: 2003\Avi Wee Spa Tec158, 56.pdf

? Sparaco, P. (2003), SARS in Europe - Air France notes that cabin filtration can stop a SARS-sized virus. *Aviation Week & Space Technology*, **158** (17), 24-26.

Full Text: 2003\Avi Wee Spa Tec158, 24.pdf

? Mecham, M. and Dennis, W. (2003), Industry’s Strongest Suffer - Asia has been the bright spot among world airlines, but it didn’t take SARS long to lay them low. *Aviation Week & Space Technology*, **158** (18), 43-44.

Full Text: 2003\Avi Wee Spa Tec158, 43.pdf